Runhuan Feng

Department of Mathematical Sciences
University of Wisconsin - Milwaukee
PO Box 413, Milwaukee, WI 53201-0413
Email: fengr@uwm.edu

EDUCATION

Doctor of Philosophy, Actuarial Science — December 2008
University of Waterloo, Ontario, Canada.

Master of Science, Actuarial Mathematics — June 2005
Concordia University, Quebec, Canada.

Bachelor of Science, Statistics — June 2003
Bachelor of Economics, Insurance
Nankai University, Tianjin, China.

PROFESSIONAL DESIGNATION

Associate of the Society of Actuaries — 2009 - Present

Fulfilled exam requirements for the Finance/ERM track of the Fellowship of the Society of Actuaries

- Financial Economics Theory and Engineering exam (Fall 2010)
- Advanced Finance/ERM exam (Spring 2011)

EXPERIENCE

Assistant Professor — Fall 2008- Present
Dept of Mathematical Sciences, UW- Milwaukee

- Taught a series of statistics and actuarial courses including *Calculus and Analytic Geometry*, *Regression*, *Time Series Analysis*, *Theory of interest*, *Financial Economics* and *Life Contingencies.*
- Participated in developing new actuarial science courses including *Actuarial Models I: Life Contingencies, Actuarial Models II: Financial Economics, Actuarial Risk Theory, Actuarial Statistics I: Fitting of Loss Models, Actuarial Statistics II: Credibility, Risk Measures and Related Topics.*

Visiting Scholar — Summer 2011
School of Finance, Renmin University of China

- Invited to offer a short-term summer course *Actuarial Mathematics* to the Classes of 2008 and 2009.

Consultant 2008- 2009
Prometric Inc, Maryland

- Developed financial mathematics test items for the Society of Actuaries Financial Mathematics Examination for three sessions.

Part-time Lecturer 2006-2008
Dept of Statistics and Actuarial Science, University of Waterloo

- Taught milestone course *Teaching and Research Seminars* in Fall 2006 and Fall 2007, and *Mathematics of Finance* in Winter 2007.
- Provided training sessions on UNIX system, text processing with Latex and statistical software packages including Matlab, R and SAS to all newly admitted graduate students in the department.

Part-time Lecturer 2004-2005
Dept of Mathematics and Statistics, Concordia University

- Taught *Fundamental Concepts of Algebra* in Winter 2004 and Fall 2004, *Calculus* in Winter 2005.

PUBLICATIONS

- R. Feng. An operator-based approach to the analysis of ruin-related quantities in jump diffusion risk models, *Insurance: Mathematics and Economics* (2011) 48(2), 304–313.
- R. Feng, J. Garrido. Actuarial applications of epidemiological models, to appear in *North American Actuarial Journal* (2011).
- R. Feng. A matrix operator approach to the analysis of ruin-related quantities in the phase-type renewal risk model, *Bulletin of the Swiss Association of Actuaries* (2009) 1, 71-87.
- R. Feng. On the total operating costs up to default in a renewal risk model, *Insurance: Mathematics and Economics* (2009), 34(2), 305-314.
- J. Cai, R. Feng, G.E. Willmot. On the expectation of total discounted operating costs up to default and its applications, *Advances in Applied Probability* (2009) 41(2), 495-522.
- J. Cai, R. Feng, G.E. Willmot. Analysis of the compound Poisson surplus model with liquid reserves, interest and dividends, *ASTIN Bulletin* (2009) 39(1): 225-247.
- J. Cai, R. Feng, G.E. Willmot. The compound Poisson surplus model with interest and liquid reserves: analysis of the Gerber-Shiu discounted penalty function, *Methodology and Computing in Applied Probability* (2009) 11(3): 401-423.

WORKING PAPERS

- R. Feng. Arbitrage free pricing of stochastic annuities in the Black-Scholes model, (2010), submitted.
- R. Feng, Y. Shimizu. A generalization from ruin to default in Lévy insurance risk models, (2010), submitted.
- S. Zhang, R. Feng, C. Zhu. Optimal dividend strategies for piecewise-deterministic compound Poisson risk models, (2010), submitted.
- R. Feng, Y. Shimuzu. Analysis of default in Markovian additive processes, (2011)

PRESENTATIONS

- *Exact and efficient calculation of risk measures of variable annuity guarantee benefits*, 46th Actuarial Research Conference, Storrs, Connecticut, August 11, 2011.
- *Arbitrage free pricing of stochastic annuities in the Black-Scholes model*, 15th International Congress on Insurance: Mathematics and Economics, Trieste, June 15, 2011.
- *Stochastic annuity: a new tool for analyzing equity-linked investment guarantees*, invited talk at the CCISSR Colloquium of Peking University, Beijing, June 2nd, 2011.
- *Operator-based computations in jump diffusion risk models*, invited talk at the University of Iowa, March 24th, 2011.
- *An operator based approach to the analysis of defective renewal equations in a jump diffusion risk model.* The Third International Gerber-Shiu Workshop, Waterloo, Ontario, June 18th, 2010.
- *A generalization of discounted penalty function in ruin theory.* The 2010 International Conference on Insurance and Actuarial Science, Chongqing, June 6th, 2010.
- *The tortoise and the hare: speed measure, occupation measure and their applications*, invited talk at the University of Waterloo, February 26th, 2010.
- *Stochastic annuities: an exploration of Black-Scholes model from an actuarial prospective*, 44th Actuarial Research Conference, Madison, July 29th, 2009.
- *A general class of ruin-related quantities in Sparre Andersen models*, 13th International Congress on Insurance: Mathematics and Economics, Istanbul, May 27th, 2009.
- *Unlock your actuarial fantasy - stochastic compound interest models*, invited talk at the University of Waterloo, March 27th, 2008.

- *A unifying stochastic approach in ruin theory with applications in interest theory*, invited talk at the University of Nevada - Las Vegas, March 11th, 2008.
- *A unifying stochastic approach in ruin theory with applications in credit risk modelling*, invited talk at Concordia University, Montreal, January 25th, 2008 and at the University of Wisconsin - Milwaukee, February 12th, 2008.
- *A generalized Gerber-Shiu function in piecewise-deterministic markov process*, 42nd Actuarial Research Conference, Pittsburgh, August 9th, 2007.
- *Applications of epidemiological models in actuarial mathematics*, 41st Actuarial Research Conference, Montreal, August 11st, 2006.

RESEARCH GRANTS

- The Actuarial Foundation: Individual Grant Competition 2010-12

  Principal investigator: *Valuation of Counterparty Credit Risk Using Collective Risk Theoretic Approaches*

- Society of Actuaries Institutional Grant 2010
  In recognition of faculty attaining ASA designation.

- Center for International Education Travel Grant 2009

- Society of Actuaries/ Casualty Actuarial Society PhD Research Grant 2008

  Principal investigator: *A Unifying Approach to Stochastic Approach in Ruin Theory with Applications in Credit Risk Modelling*

- Institute of Quantitative Finance & Insurance Research Grant 2007

  Co-investigator (with Dr. J. Cai): *Analysis of Default in Piecewise-deterministic Markov risk models*

STUDENT SUPERVISION

- Melanie Serbiné, *Risk measures for investment guarantees: simulations versus exact calculation*, master's thesis, 2011.
- Franziska Thieme, *Pricing of equity-indexed annuities in regime switching models*, master's thesis, 2010.
- Xin Xie, *A survey of credit risk models*, master's thesis, 2010.

- Yuhui Sheng, *First hitting-time distributions of stochastic annuities in a complete market*, master's thesis, 2009.

COMMUNITY SERVICE

Peer-review Service 2008-Present

- Invited to review academic papers for actuarial journals including *Insurance: Mathematics and Economics, ASTIN Bulletin* and probability related journals including *Acta Mathematicae Applicatae Sinica, Journal of Systems Science and Complexity* as well as papers for *Mathematical Reviews*.

Front Desk Assistant 2006-2007
University of Waterloo Columbia Lake Village

- Provided customer service to students and visitors including answering inquiries, monitoring the community centre, signing out equipments, etc.

Ethnic Month Presentation January 2009
West Bend Mutual Insurance Co.

- Invited to give a talk on cultural traditions of Chinese new year as a part of Ethnic Month seminars.

THESIS DEFENSE COMMITTEE SERVICE

- Jacqueline Bluhm, M.Sc. Defense, May 2011
- Devangkumar Premshanker Bhatt, M.Sc. Defense, January 2011
- Manuel J. Gröger, M.Sc. Defense, May 2010
- Kamilla Kasymova, M.Sc. Defense, May 2010
- Hans P. Steiner, M.Sc. Defense, April 2010
- Harald Dornheim, Ph.D. Defense, November 2009
- Patrick J. Heinrich, M.Sc Defense, May 2009
- Michael Sauler, M.Sc Defense, April 2009
- Katharina Zaglauer, Ph.D. Defense, February 2009

HONORS

- Institute of Quantitative Finance & Insurance Graduate Scholarship, University of Waterloo 2007
- Teaching Assistant Award, University of Waterloo 2006
- Comprehensive Exam Scholarship, University of Waterloo 2006
- The Dominion of Canada General Insurance Company Graduate Scholarship 2006

- University of Waterloo Graduate Merit Scholarship 2006
- Concordia University Campaign for A New Millennium Student Contribution Graduate Scholarship 2004
- Concordia University International Tuition Fee Remission Award 2003-2005
- Nankai University Studentship 2000-2003
- Second Prize, Tianjin Intercollegiate Advanced Mathematical Competition 2002