CURRICULUM VITAE

September 9, 2012

1. Biographical Information

Name: Xiaoming Liu

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Education:

	University	Department	Year
Ph.D.	University of Toronto	Department of Statistics	2008
M.Sc.	Beijing Normal University	Department of Mathematics	1992
B.Sc.	Nanchang Institute of Aeronautical Technology	Department of Mathematics	1989

I am close to becoming an Associate of the Society of Actuaries (ASA). I have passed five Exams (P, FM, MFE, MLC and C) given by the Society of Actuaries, and have completed all required credits for the validation of education experience (VEE). I am currently taking the Fundamentals of Actuarial Practice (FAP) e-Learning course. Next year, I will take a half-day Associateship Professionalism Course (APC) to complete the requirements for attaining the ASA designation.

Employment History:

2012.7 – Present, Associate Professor, Department of Statistical and Actuarial Sciences, University of Western Ontario, Canada.

2006.7 – 2012.6, Assistant Professor, Department of Statistical and Actuarial Sciences, University of Western Ontario, Canada.

- teach and conduct research in Actuarial Sciences.

2006.1 – 2006.4, Sessional Instructor, Department of Statistics, University of Toronto, Canada

- taught second year actuarial course.

1996 – 2001, Lecturer, Department of Information, Renmin University of China

- taught mathematics, statistics and probability;
- assisted the set-up of the Actuarial Examination Center of the Society of Actuaries in the school of Statistics in Renmin University of China in 1995, and taught several actuarial courses there;
- conducted research projects and provided consulting to insurance companies.

1992 – 1996, Assistant Lecturer, Department of Information, Renmin University of China

- taught courses in mathematics, statistics and probability.

Honors:

1997, MetLife Scholarship for Teachers, Renmin University of China

2. Academic History

Research Interests

My research interests lie in the area of Actuarial Science, Mathematical Finance, and Stochastic Processes. In particular, I focus on mortality risk modeling and its related problems such as pricing and risk management of insurance policies with the consideration of different risk factors.

Research Grants:

2011.1	$2,500	Society of Actuaries. Travel Grant for attending Living to 100 Symposium, 2011
2010.12	$800	Travel Grant for attending ASFM2010, Hong Kong
2007-2012	$60,000	NSERC (Natural Sciences and Engineering Research Council of Canada) Discovery Grant-Individual
2007-2008	$34,994	NSERC RTI Grant (with 11 others)
2006-2012	$25,000	Start-up Grant from University of Western Ontario
2006-2007	$9,000	Committee on Knowledge Extension Research, Society of Actuaries. Research Grant (with X. Sheldon Lin)

3. Scholarly and Professional Work and Activities

Articles submitted:

1. **Xiaoming Liu,** Rogemar Mamon and Huan Gao (2011), A comonotonicity-based valuation method for annuity-linked contracts. Submitted to *Journal of Computational and applied Mathematics.*

2. **Xiaoming Liu** (2011), Investigation of annuity uncertainty with stochastic mortality and investment. Submitted to *North American Actuarial Journal.*

3. **Xiaoming Liu,** Rogemar Mamon and Huan Gao (2011), Pricing a guaranteed annuity option under stochastic mortality and financial risks: A change of probability measure approach. Submitted to *Stochastics*.

Articles in refereed journals:

4. **Xiaoming Liu** and Sheldon Lin (2012), A subordinated Markov model for stochastic mortality. *European Actuarial Journal* 2(1), 105-127.

5. **Xiaoming Liu**, Jisoo Jang and Sun Mee Kim (2011). An application of comonotonicity theory in a stochastic life annuity framework. *Insurance: Mathematics and Economics*, 48, 271-279.

6. **Xiaoming Liu** and John Braun (2010), Investigating Mortality Uncertainty Using the block bootstrap, *Journal of Probability and Statistics*, Volume 2010, 15 pages.

7. Sheldon Lin and **Xiaoming Liu** (2007). Markov Aging Process and Phase-type Law of Mortality. *North American Actuarial Journal*, 11, 92-109.

Articles in refereed conferences:

8. **Xiaoming Liu** and Hao Yu (2011), Assessing and extending the Lee-Carter model for long-term mortality prediction, 59 pages. SOA Living to 100 Symposium, Jan 5-7, 2011. (A shorter version of this paper is now under review for publication to *North American Actuarial Journal*.)

Other Publications

1. Sheldon Lin and **Xiaoming Liu** (2005). Discussion of Ng and Yang's “Lundberg-type bounds for the joint distribution of surplus immediately before ruin and at ruin under the Sparre-Andersen model", *North American Actuarial Journal,* 9(2), 102-107.

2. **Xiaoming Liu** (2008), Ph.D. thesis: Stochastic Mortality Modelling. University of Toronto

Invited talks at professional meetings/workshops and others:

2012 Invited Plenary speaker at 2012 China International Conference on Insurance and risk Management, Qingdao, China. July 18-21, 2012.
2011 The Third Living to 100 Symposium, Society of Actuaries, Orlando, U.S. Jan. 5, 2011
2010 International Conference on Applied Statistics and Financial Mathematics (ASFM2010), Hong Kong, Dec. 17, 2010,
2009 The 2nd Annual UWO Actuarial Event at London Life, London, Ontario, September 17, 2009.
2008 Department colloquium, Department of Statistics and Actuarial Science, University of Western Ontario, Ontario, Canada. Jan. 2008

Contributed talks at professional meetings/workshops and others:

1. 16th International Congress on Insurance: Mathematics and Economics, Hong Kong, China, 2012
2. International Conference on Actuarial Science and Risk Management, Xiamen, China, June 24-26, 2012
3. 14th International Congress on Insurance: Mathematics and Economics, Toronto, Canada, 2010
4. 13th International Congress on Insurance: Mathematics and Economics, Istanbul, Turkey, 2009
5. The Third multi-disciplinary symposium of Ontario Chinese Professors, Niagara, Ontario, 2009
6. Power Hours Seminar in the Department of Applied Mathematics, University of Western Ontario, May, 2009
7. 12th International Congress on Insurance: Mathematics and Economics, Dalian, China, 2008
8. 11th International Congress on Insurance: Mathematics and Economics, Piraeus, Greece, 2007
9. 10th International Congress on Insurance: Mathematics and Economics, Leuven, Belgium, 2006
10. Department Seminar, Department of Statistical and Actuarial Sciences, University of Western Ontario,

London, Ontario, Canada, January 2006
11. Department Seminar, Department of Statistics and Actuarial Science, University of Waterloo, Waterloo, Ontario, Canada. Jan. 2006
12. 40th Annual Actuarial Research Conference, Mexico City, Mexico, August, 2005.
13. Graduate Student Seminars, Dept of Statistics, University of Toronto, Nov. 2005.

External Reviewer for grant proposals

2011 The Research Grants Council, Hong Kong

External Examiner for Ph.D. Thesis

2011 Yanyu Xiao in the Department of Applied Mathematics at the University of Western Ontario

2011 Jun Du in the Department of Computer Science at the University of Western Ontario

Examiner for M.SC. Thesis

2012 William Wei Xing in the Department of Applied Mathematics at the University of Western Ontario

Member of Scientific Committee

2012 Longevity 8 conference at the University of Waterloo, Waterloo, Canada

Referee for

Insurance: Mathematics and Economics
North American Actuarial Journal
Environmetrics

Conference Session Moderator for

14th International Congress on Insurance: Mathematics and Economics, Toronto, June 17-19, 2010

4. Teaching and Student Supervision

Postdoctoral Fellows

2009- 2010 Amin Hassan Zadeh (supported with other 5 colleagues)

Ph.D. students

2010- Huan Gao

M.Sc. students and their research projects

2011-2012, Minxian Lv, “The Impact of Investment Strategy of DC Pension Plan on Retirement Age Distribution" (Co-supervised with Hao Yu)
Yu Lin, “Dynamic Population Structure with Stochastic Mortality and Fertility Rates"
Defang Wu, “Assessing systematic bias in mortality prediction of the Lee-Carter model" (Co-supervised with Hao Yu)

2009-2010, Yingying Gan, “Modulated Markovian Time Varying Index under the Lee-Carter Framework”.

Sunmee Kim, “Application of comonotonic theory in annuity rate”.
2008-2009, Jisoo Jang, “Stochastic Life Annuity”.
Sirlei Cavassin, “An extension to the Lee-Carter Model” (with Hao Yu)
2007-2008, Bifeng Xie, “Measuring mortality risk based on Lee-Carter model “

USRA (Undergraduate Student Research Awards) students and their research projects

2009-2010, Paul D’Cruz, “Parameter uncertainty based on stochastic mortality models”.
2008-2009, Juliane Szeto, “Comparing the Lee-Carter and two-factor stochastic mortality models for financial risk measures”.

Other Undergraduate Students

2011, July to Aug., summer research assistant, Defang Wu, “Approximation methods for sums of lognormal random variables”.

Graduate Courses Taught:

2008 – 2012 AS9990A Stochastic Analysis with Applications in Finance.
2008 – 2011 AS9972B Stochastic Mortality Modelling.
2009 – 2010 AS9980Y Colloquium.
2007 – 2008 AS790A Stochastic Analysis with Applications in Finance.
2007 – 2008 AS772B Mortality Modelling
2006 – 2007 AS790B Stochastic Processes with Applications in Finance and Actuarial Science.

Undergraduate Courses Taught:

2010 – 2012 AS3429B Life Contingencies II
2009 – 2012 AS3431A/B Multi-State Models
2006 – 2008 AS422A Multi-State Models

Undergraduate Courses Taught at the *University of Toronto*:

2006.1-2006.4 ACT427 Introductory Life Contingencies

Other Teaching Duties:

2011- A member of teaching staff for proposed new Masters in Financial Economics program

5. Administrative Duties:

Department of Statistical and Actuarial Sciences, University of Western Ontario

2011 – present: member of departmental Graduate Affairs Committee
2009 – 2010: departmental colloquium organizer
2009 – present: member of departmental London Life Scholarship Committee
2008 – present: member of departmental Undergraduate Affairs Committee

2006 – present: member of departmental Research Committee
2007 – 2009: member of departmental Outreach Committee