

KRISTEN S. MOORE

Department of Mathematics
University of Michigan
530 Church Street
Ann Arbor, MI 48109-1043

phone: 734 615 6864
fax: 734 763 0937
ksmoore@umich.edu

EDUCATION AND EMPLOYMENT HISTORY

- *Associate Chair for Education*, Department of Mathematics, University of Michigan (July 2017 – present)
- *Associate Professor*, Department of Mathematics, University of Michigan (September 2007 – present)
- *Assistant Professor*, Department of Mathematics, University of Michigan (September 2001 – August 2007)
- *Three-year Assistant Professor*, Department of Mathematics, University of Michigan (September 1999 – August 2001)
- *Ph.D. in Mathematics*, University of Connecticut, Advisor: P.J. McKenna (June 1999)
- *M.S. in Mathematics*, University of Connecticut (June 1996)
- *Associate of the Society of Actuaries* (1992); Passed the SOA examinations for Courses 5 and 6 (2003); Passed the Fundamentals of Actuarial Practice Module 6 (2009)
- *Actuarial Associate*, CIGNA Companies, Hartford, CT (1990-1994)
- *B.S. in Mathematics*, Magna Cum Laude, Bucknell University (June 1990)

PUBLICATIONS

Actuarial and Financial Mathematics

- [1] K. S. Moore and V. R. Young. Pricing equity-linked endowments via the principle of equivalent utility. *Insurance: Mathematics and Economics*, **33** (2003), no. 3, 497-516.
- [2] K. S. Moore and V. R. Young. Optimal design of a perpetual equity-indexed annuity. *North American Actuarial Journal*, **9** (2005), no. 1, 57-72.
- [3] M. A. Milevsky, K. S. Moore, and V. R. Young. Asset allocation and annuity-purchase strategies to minimize the probability of financial ruin. *Mathematical Finance*, **16** (2006), no.4, 647-671.
- [4] K. S. Moore and V. R. Young. Optimal insurance in a continuous-time model. *Insurance: Mathematics and Economics*, **39** (2006), no.1, 47-68.
- [5] K. S. Moore and V. R. Young. Optimal and simple, nearly-optimal rules for minimizing the probability of ruin in retirement. *North American Actuarial Journal*, **10** (2006), no. 4, 145-161.
- [6] K. S. Moore. Optimal surrender strategies for equity-indexed annuity investors. *Insurance: Mathematics and Economics*, **44** (2009), no. 1, 1-18.
- [7] E. Bayraktar, K. S. Moore, and V. R. Young. Minimizing the probability of lifetime ruin under random consumption. *North American Actuarial Journal*, **12** (2008), no. 4, 384-400.
- [8] K. S. Moore and V. R. Young. Minimizing the Probability of Lifetime Ruin When Shocks Might Occur, *North American Actuarial Journal*, **20** (2016), no. 1, 17-36.
- [9] G. Gu, D. Kausch, K. S. Moore, and V.R. Young. Balancing Income and Bequest Goals in a DB/DC Hybrid Pension Plan. *Journal of Retirement*, **4** (2017), no. 3, 51-62.

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PUBLICATIONS (Continued)

Nonlinear Dynamics

- [10] P. J. McKenna and K. S. Moore. Mathematics arising from suspension bridge dynamics: recent developments. *Jahresbericht der Deutschen Mathematiker-Vereinigung*, **101** (1999), no. 4, 178-195.
- [11] P. J. McKenna and K. S. Moore. Multiple periodic solutions to a suspension bridge ordinary differential equation. *Proceedings of the Conference on Nonlinear Differential Equations (Coral Gables, FL, 1999)*, *Electronic Journal of Differential Equations Conference*, **5** (2000) 183-199.
- [12] K. S. Moore. Large torsional oscillations in a suspension bridge: multiple periodic solutions to a nonlinear wave equation. *SIAM Journal on Mathematical Analysis*, **33** (2002), no. 6, 1411-1429.
- [13] P. J. McKenna and K. S. Moore. The global structure of periodic solutions of a suspension bridge mechanical model. *IMA Journal of Applied Mathematics*, **67** (2002), no. 5, 459-478.
- [14] N. Ben-Gal and K. S. Moore. Bifurcation and stability properties of periodic solutions to two nonlinear spring-mass systems. *Nonlinear Analysis. Theory, Methods and Applications*, **61** (2005), no. 6, 1015-1030.

Singular Elliptic Problems

- [15] S. Hill and K. S. Moore. An existence theorem for a quasilinear elliptic boundary value problem with boundary blowup. *Nonlinear Analysis. Theory, Methods, and Applications*, **38** (1999), no. 8, 951-958.
- [16] S. Hill, K. S. Moore, and W. Reichel. Existence and uniqueness theorems for quasilinear elliptic boundary value problems. *Proceedings of the American Mathematical Society*, **128** (2000), no. 6, 1673-1683.

RESEARCH IN PROGRESS

- [17] Y. Gong, Z. Li, M. Milazzo, K.S. Moore, and M. Provencher. *Credibility methods for individual life insurance*, submitted for publication, under revision.
- [18] K. Dong, N. Halen, K.S. Moore, and Q. Zeng. *Efficient retirement portfolios: Using life insurance to meet income and bequest goals in retirement*, in progress.
- [19] K.S. Moore and C. Reynolds. *Firearm Risk: An Insurance Perspective*, submitted for publication.
- [20] K.S. Moore, H. Qian, and V.R. Young. *Optimal deductible insurance to minimize the probability of lifetime ruin: positive risk loading and random loss*, in progress.

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FUNDING

- *Centers of Actuarial Excellence Grant*, Society of Actuaries, 2012
- *Elizabeth Caroline Crosby Research Award*, University of Michigan, 2012
- *CKER Grant*, Society of Actuaries, March 2005
- *Elizabeth Caroline Crosby Research Award*, University of Michigan, 2002
- *Postdoctoral Research Fellowship*, American Association of University Women, 2001-2002
- *Officer's Grant*, Alfred P. Sloan Foundation, 2001
- *Rackham Fellowship*, Rackham School of Graduate Studies, University of Michigan, 2001

RECOGNITION AND AWARDS

- *Award for Excellence in Concentration Advising*, College of Literature, Science and the Arts, University of Michigan, 2007
- *Class of 1923 Memorial Teaching Award*, College of Literature, Science and the Arts, University of Michigan, 2007
- *Excellence in Education Award*, College of Literature, Science, and the Arts, University of Michigan, December 2003
- *Project NExT Fellow (New Experiences in Teaching)* (1999-2000)
- *Constance Strange Graduate Community Award* (May 1999) University of Connecticut
- *Louis DeLuca Fellowship for Outstanding Teaching* (May 1997) University of Connecticut
- *Award for Outstanding Scholarship in Mathematics* (June 1990) Bucknell University

COURSES

University of Michigan (1999 – present)

Math 115	Calculus 1
Math 147	Interest Theory
Math 354	Fourier Analysis and Its Applications
Math 423	Mathematics of Finance
Math 424	Compound Interest and Life Insurance
Math 425	Introduction to Probability
Math 454	Boundary Value Problems for Partial Differential Equations
Math 520	Life Contingencies I
Math 521	Life Contingencies II
Math 523	Loss Models I (Formerly called "Risk Theory")
Math 700	Directed Reading and Research
Math 821	Actuarial Math Seminar

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University of Connecticut (1994 – 1999)

Note: Course numbers have changed

Math 101	Introductory Algebra
Math 103	Elementary Discrete Mathematics
Math 105	Business Mathematics
Math 106	Business Calculus
Math 210	Multivariable Calculus
Math 211	Elementary Differential Equations
Math 285	Interest Theory

ACTUARIAL EXPERIENCE

Actuarial Instructor and Advisor

Department of Mathematics, University of Michigan (September 1999 – present)
Department of Mathematics, University of Connecticut (Fall 1997, Fall 1998)

Actuarial Associate

CIGNA Companies, Hartford, CT (August 1990 - August 1994)

Provided actuarial support in CIGNA's Health Care, Individual Financial Services, and Group Pension divisions. Priced innovative managed health care products and group single premium annuities. Analyzed and enhanced life insurance division's methodology for reporting gains by source and by product.

Associate of the Society of Actuaries (1992)

Completed the series of examinations that leads to the ASA designation (1992). Passed the Course 5 and Course 6 examinations (2003). Passed the Fundamentals of Actuarial Practice Module 6 (2009).

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SERVICE TO THE DEPARTMENT AND UNIVERSITY

- Associate Chair for Education, Mathematics Department (July 2017 – present)
- Quantitative Finance Master's Program, Admissions Committee (Fall 2014 – present)
- Actuarial Master's Admissions, Fellowships, and Advising (Fall 2013 – present)
- Academic Judiciary Committee, College of Literature, Science, and the Arts (2014-2016)
- Undergraduate Counseling Committee, Mathematics Department (2003-2014)
- Scholarship and Awards Committee (2013 – 2015)
- Executive Committee, Mathematics Department (2002-2003, 2011-2013)
- Curriculum Committee, College of Literature, Science, and the Arts (2007, 2011)
- Development Committee, Mathematics Department (2011-2015)
- ContinuUM Editorial Board (2012 – 2015)
- Mentor, Blavin Scholars Program (2011-2013)
- Preliminary Examination Committee, Applied and Interdisciplinary Mathematics Program, Mathematics Department (2004-2009)
- Co-organizer, Actuarial and Financial Mathematics Seminar, Mathematics Department (2003-2006)
- Host, King/Chavez/Parks (KCP) College Visitation Day, Office of Academic Multicultural Initiatives (2003-2005)
- Junior Women Faculty Network Steering Committee, University of Michigan (2002-2006)
- Faculty Mentor, University of Michigan Mentorship Program, Office of New Student Programs (2002-2003)

SERVICE TO THE MATHEMATICS AND ACTUARIAL COMMUNITIES

- Society of Actuaries Center of Actuarial Excellence Grant Committee (2016)
- Coordinated and moderated panel discussion entitled *University Programs for Academic-Practitioner Collaboration* at Society of Actuaries Annual Meeting (2013)
- Education and Research Section Council, Society of Actuaries (2010-2013)
- Halmstad Prize Committee, Society of Actuaries (2008)
- Organizing Committee, Association for Women in Mathematics workshop held in conjunction with the Society for Industrial and Applied Mathematics annual meeting (2006)
- Committee on the Participation of Women, Mathematical Association of America (2002-2008)
- Session Organizer, *Improving the Persistence of Women in Graduate School*, Joint Mathematics Meetings (January 2003)
- Master Program Committee, Society for Industrial and Applied Mathematicians (2002-2003)
- Committee on the Profession, Mathematical Association of America (2001-2004)
- Judge, Undergraduate Student Poster Session, Mathematical Association of America (2001-2003)
- Referee
 - North American Actuarial Journal
 - Journal of Pension Economics and Finance
 - Journal of Insurance Issues
 - Journal of Math. Analysis and Applications
 - Journal of Computational and Applied Mathematics