Scott Philip Robertson

CONTACT INFORMATION

Department of Mathematical Sciences
Wean Hall 6113
Carnegie Mellon University
Pittsburgh, PA 15213

Voice: (781) 354-5523
Email: scottrob@andrew.cmu.edu
Website: www.math.cmu.edu/users/scottrob

RESEARCH INTERESTS

Mathematical Finance, Stochastic Processes, Large Deviations, Utility Maximization, Exotic Options Pricing. Mortgage Backed Securities.

EDUCATION

Boston University, Boston, Massachusetts USA — Aug. 2003 - May 2009

Ph.D., Mathematics

- Adviser: Paolo Guasoni
- Thesis : "Applications of Large Deviations Principles to Options Pricing and Portfolio Choice"

Harvey Mudd College, Claremont, California USA — Sept. 1995 - May 1999

B.S., Mathematics

EMPLOYMENT HISTORY

Carnegie Mellon University, Pittsburgh, Pennsylvania USA — Sept. 2011 - Present

Assistant Professor in the Department of Mathematical Sciences

Carnegie Mellon University, Pittsburgh, Pennsylvania USA — Sept. 2009 - Aug. 2011

Postdoctoral Associate in Applied Probability and Mathematical Finance

Fidelity Investments, Boston, Massachusetts USA — Sept. 2002 - Aug. 2003

Fixed Income Performance Analyst

Salomon Smith Barney, New York, New York USA — Aug. 1999 - Mar. 2002

Analyst : Fixed Income Research Division, Yield Book Group

GRANTS/EXTERNAL FUNDING

S. Robertson 'Stochastic Analysis of Large Investors'. National Science Foundation. DMS-1312419. 2013-2016.

D. Kramkov, K. Larsen, S. Robertson, H.M. Soner 'Methods of Mathematical Finance'. National Science Foundation. DMS-1523424. 2015.

PEER REVIEWED PUBLICATIONS

K. Kardaras, S. Robertson. 'Continuous Time Perpetuities and Time Reversal of Diffusions'. *Finance and Stochastics, Forthcoming.*

S. Robertson, K. Spiliopoulos, 'Indifference Pricing for Contingent Claims: Large Deviations Effects'. *Mathematical Finance, Forthcoming.*

S. Robertson. 'Pricing for Large Positions in Contingent Claims'. *Mathematical Finance, Forthcoming.*

S. Robertson, H. Xing, 'Large Time Behavior of Solutions to Semi-Linear Equations with Quadratic Growth in the Gradient'. *SIAM Journal on Control and Optimization*, 53-1 (2014) 185-212.

P. Guasoni, K. Kardaras, S. Robertson, H. Xing. 'Abstract, Classic and Explicit Turnpikes'. *Finance and Stochastics*, 18-1 (2014) 75-114.

P. Guasoni, S. Robertson. 'Static Fund Separation of Long Term Investments'. *Mathematical Finance*, (2012) doi: 10.1111/mafi.12017.

K. Kardaras, S. Robertson. 'Robust Maximization of Asymptotic Growth'. *Annals of Applied Probability*, 22-4 (2012) 1576-1610.

P. Guasoni, S. Robertson. 'Portfolios and Risk Premia for the Long Run'. *Annals of Applied Probability*, 22-1 (2012) 239-284.

S. Robertson. 'Sample Path Large Deviations and Importance Sampling for Stochastic Volatility Models'. *Stochastic Processes and their Applications*, 120 (2010) 66-83.

P. Guasoni, S. Robertson. 'Optimal Importance Sampling with Explicit Formulas in Continuous Time'. *Finance and Stochastics*, 12 (2008) 1-19.

Submitted and Working Papers

S. Robertson, H. Xing. 'Long Term Optimal Investment in Matrix Factor Valued Models'. *Submitted. In Revision.*

M. Anthropelos, S. Robertson, K. Spiliopoulos, 'The Pricing of Contingent Claims and Optimal Positions in Asymptotically Complete Markets'. *Submitted. In Revision.*

Z. Cheng, S. Robertson 'Endogenous Current Coupons'. *Submitted.*

Conference Presentations & Invited Talks

'The Pricing of Contingent Claims and Optimal Positions in Asymptotically Complete Markets'

AMS Sectional Meeting. Loyola University of Chicago. Chicago, IL. October 2015
University of Texas at Austin. Austin, Texas. November 2015.
Stochastic Methods in Finance and Physics Workshop. Heraklion, Crete. July 2015.

'Endogenous Mortgage Current Coupons'

Bachelier Finance Society Ninth World Congress. New York, NY. July 2016.
2016 SIAM Annual Meeting. Boston MA. July 2016.
BIRS-CMO Workshop "Stochastic Analysis and Mathematical Finance - A Fruitful Partnership". Oaxaca Mexico. May 2016.
Purdue University, West Lafayette, IN. April 2016.
2015 Fifth Annual IMS-FIPS Workshop. Rutgers University, New Brunswick, NJ. June 2015.
University of Pittsburgh, Pittsburgh, PA. April 2015.

Dublin City University, Dublin, Ireland. March 2015.

'Indifference Pricing for Contingent Claims: Large Deviations Effects'

Columbia University, New York, NY. November 2014.

University of Michigan, Ann Arbor, MI. October 2014.

London School of Economics, London, England. October 2014.

'Long Term Optimal Investment in Matrix Valued Factor Models'

Banff International Research Center Workshop "New Directions in Financial Mathematics and Mathematical Economics". Banff, Canada. July 2014.

'Continuous Time Perpetuities and the Time Reversal of Diffusions'

Bachelier Finance Society Eighth World Congress. Brussels, Belgium. June 2014.

Banff International Research Center Workshop "Mathematical Finance: Arbitrage and Portfolio Optimization". Banff, Canada. May 2014.

Boston University, Boston, MA. April 2014.

Rutgers University, New Brunswick, NJ. February 2014.

'Static Fund Separation of Long Term Investments'

Frontiers in Financial Mathematics 2013. Dublin, Ireland. June 2013.

London School of Economics. London, England. May 2013.

University of Pittsburgh. Pittsburgh, PA. April 2013.

AMS Spring Eastern Section Meeting, Boston College. Boston, MA. April 2013.

'Utility-Based Pricing in the Large Claim, Nearly Complete Limit'

Workshop on Mathematical Finance and Related Issues. Center for the Study of Finance and Insurance, Osaka University. Kyoto, Japan. September, 2012.

University of Texas, Austin Portugal Summer School and Workshop in Mathematics. Lisbon, Portugal. July 2012.

Nomura Seminar. University of Oxford, Mathematical Institute. Oxford England. June 2012.

Asymptotics in Finance. University of Chicago. Chicago Illinois. May 2012.

Stochastic Analysis in Finance and Insurance. University of Michigan. Ann Arbor, Michigan. May 2011.

'Robust Maximization of Asymptotic Growth'

Boston University. Boston, Massachusetts. March 2011.

University of Texas. Austin, Texas. February 2011.

Carnegie Mellon University. Pittsburgh, Pennsylvania. February 2011.

Oberwolfach Workshop on Stochastic Analysis in Finance and Insurance. Oberwolfach, Germany. January 2011.

'Sample Path Large Deviations and Optimal Importance Sampling for Stochastic Volatility Models'

Bachelier Finance Society Sixth World Congress. Toronto, Canada. June 2010.

'Portfolios and Risk Premia for the Long Run'

Carnegie Mellon University. Pittsburgh, PA. December 2008.
Bachelier Finance Society Fifth World Congress. London, England. July 2008.

Universita Bocconi. Milan Italy. May 2007.

'Optimal Importance Sampling with Explicit Formulas in Continuous Time'.

Mathematical Sciences and Research Institute Interactive World Congress on Computational Fiance : the First Decade. London, England. Mar. 2007.

Bachelier Finance Society Fourth World Congress. Tokyo, Japan. Aug. 2006.

Conference Proceedings

P. Guasoni, S. Robertson. 'Importance Sampling with Basket Options'. *Wilmott*, Nov/Dec 2007.

Advising Experience

Carnegie Mellon University, Pittsburgh, Pennsylvania, USA

PhD Research Advisor 2012-Present

- Advisee: Ted Ishikawa. Current Student - working on indifference pricing for contingent claims in defaultable stock models.
- Advisee: Zhe Cheng. Date of PhD: May 2016. Thesis title: "Endogenous Mortgage Current Coupons".

Masters Research Advisor 2011-2012 Academic Year

- Advisee : Brian MacFarland. Thesis Title: 'Exposition and Application of Asymptotically Optimal Importance Sampling in the Heston Stochastic Volatility Model'.

Undergraduate Research Advisor : CNA Summer Institute Summer : 2010,2011

- Advised three groups of undergraduate students for seven weeks. Met individually with each student three hours per week. Projects focused on utility maximization for long planning horizons in discrete time models.
- Program emphasized inclusion of women and under-represented minorities.

Teaching Experience

Instructorships. Prepared and gave all lectures, homework assignments and exams. Held weekly office hours and was solely responsible for administering final grades for the following classes:

Carnegie Mellon University, Pittsburgh, Pennsylvania, USA

The Mathematics of Fixed Income Markets	Fall 2015
Graduate Level Stochastic Calculus	Fall 2014, 2015
Stochastic Calculus for Finance I	Spring 2013, 2014, 2015, 2016
Monte Carlo Simulation	Fall 2010, 2011, 2012, 2013, 2014
Continuous-Time Finance	Spring 2011, 2012
Calculus of Approximation	Fall 2009

Boston University, Boston, Massachusetts, USA

Probability Theory	Summer 2007, 2009

Teaching Assistantships. Graded homework assignments and exams, held weekly office hours for the following classes at Boston University in Boston, MA : Probability Theory, Real Options, Operations Research.

Other Mathematical Activities

Review Panelist for the National Science Foundation.

Reviewer for *Mathematical Finance*, *SIAM Journal on Financial Mathematics*, *Finance and Stochastics*, *Stochastic Processes and their Applications*, *Mathematics and Financial Economics*, *SIAM Journal on Control and Optimization*, *SIAM Journal on Financial Mathematics*, *Applied Mathematics and Optimization* and *Stochastics*.

Member of the American Mathematical Society and the Society for Industrial and Applied Mathematicians.

Honors and Awards

Boston University

Research fellow	2007 - 2009
ACES Program member, sponsored by NSF IGERT Grant	2005 - 2009
Teaching fellow	2003 - 2005

Harvey Mudd College

High Distinction	1999
Honors in Mathematics	1999

Dean's List	1996-1999
Letter of Commendation	1995