

## **CURRICULUM VITA**

### **DILIP B. MADAN**

**DATE OF BIRTH:** December 12, 1946

**CITIZENSHIP:** U.S.

#### **CURRENT ADDRESSES:**

**Office:**

Department of Finance  
Robert H. Smith School of Business  
Van Munching Hall  
University of Maryland, College Park  
College Park, MD 20742  
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**Home:**

14845 Carona Drive  
Silver Spring, MD 20905  
Tel. No.: (301) 989-0280

#### **EDUCATION:**

1962-67 B. Comm. (University of Bombay)  
Accounting 1967- 71 Ph.D. Economics (University of Maryland)  
1971-75 Ph.D. Mathematics (University of Maryland)

#### **SCHOLARSHIPS:**

NDEA Fellow 1968-1970, NSF Fellow 1971

#### **EMPLOYMENT:**

**CURRENT POSITION:** Professor of Finance  
Robert H. Smith School of Business  
University of Maryland College Park

#### **PREVIOUS FULL TIME POSITIONS:**

1971-1975: Assistant Professor of Economics, University of Maryland  
1976-1979: Lecturer in Economic Statistics, University of Sydney  
1980-1988: Senior Lecturer in Econometrics, University of Sydney  
1981-1982: Acting Head, Department of Econometrics, Sydney  
1989-1992: Assistant Professor of Finance, University of Maryland  
1992-1997: Associate Professor of Finance, University of Maryland

#### **VISITING POSITIONS:**

1974-1975: Visiting Fellow in Economics, La Trobe University  
1977-1978: Visiting Assoc. Professor of Economics, University of Maryland  
1986-1987: Visiting Assoc. Professor of Economics, University of Maryland  
1988-1989: Visiting Assoc. Professor of Finance, University of Maryland

1995- May: Visiting Scholar, Isaac Newton Institute, Cambridge University  
1995- Fall: Visiting Scholar, Cornell University  
2002-Fall: Visiting Professor, Laboratoire de Probabilite, University Paris, VI.  
1996-2003 (January): Visiting Professor, University of Paris IX at Dauphine

### **CONSULTING POSITIONS:**

1996- present: Consultant to Morgan Stanley, Equity Derivatives Research  
1585 Broadway, 6th Floor, New York, NY  
2004-present: Caspian Capital Inc.  
2005: Wachovia Securities  
2004-2006: FDIC  
2003, 2006-present: Bloomberg

### **PROFESSIONAL ACTIVITIES:**

**Memberships:** Bachelier Finance Society

**Awards:** 2006 recipient of the Humboldt Research Award in Mathematics

**Editorships:** Managing Editor of Mathematical Finance; Series Editor on Financial Mathematics for CRC, Chapman and Hall; Associate Editor for Quantitative Finance, Review of Derivatives Research, Journal of Credit Risk

**Professional Positions:** Past President (2002-2003) Bachelier Finance Society

**Major Recent Refereeing:** Journal of Finance, Review of Financial Studies, Review of Derivatives Research, Journal of Derivatives, Mathematical Finance, Finance and Stochastics, Journal of Banking and Finance, Journal of Economic Dynamics and Control, The Annals of Applied Probability, Management Science

### **TEACHING EXPERIENCE:**

#### ***Courses Taught in:***

#### ***Finance***

Financial Management, Undergraduate, University of Maryland  
Investments, Undergraduate, MBA and Ph.D., University of Maryland  
Finance Theory, Ph.D., University of Maryland  
Futures and Options, Undergraduate and MBA, University of Maryland  
Mathematical Finance, Ph.D, University of Maryland

#### ***Economics***

Microeconomics, Undergraduate, University of Maryland  
Macroeconomics, Undergraduate, University of Maryland  
Welfare Economics, Undergraduate Honors, LaTrobe University, University of Sydney  
Cost Benefit Analysis, Undergraduate Honors, University of Sydney  
Public Enterprise Economics, Undergraduate Honors, University of Sydney

#### ***Mathematical Economics***

Mathematics for Economists, Undergraduate and Ph.D., Universities of Maryland and Sydney  
General Equilibrium Theory, Undergraduate, Universities of Maryland and Sydney  
Applied General Equilibrium Modeling, Undergraduate Honors, University of Sydney

Game Theory, Undergraduate Honors, University of Sydney

### **Statistics**

Elementary Statistics, Undergraduate, University of Sydney

Multivariate Analysis, Undergraduate Honors, University of Sydney

Applied Stochastic Processes, Undergraduate Honors, University of Sydney

### **Econometrics**

Applied Econometrics, Undergraduate, University of Sydney

Advanced Theoretical Econometrics, Undergraduate, University of Sydney

Econometrics of Limited Dependent Variable Models, Undergraduate Honors, University of Sydney

### **Operations Research**

Linear Programming, Undergraduate, University of Sydney

Optimization Methods, Undergraduate, University of Sydney

Control Theory, Undergraduate Honors, University of Sydney

Stochastic Control Theory, Undergraduate Honors, University of Sydney

Numerical Analysis, Undergraduate, University of Sydney

### **PUBLICATIONS:**

1. (1980) "The Relevance of a Probabilistic Form of Invertibility," in *Biometrika*, 67,3,704-5. (with G. Babich).
2. (1982) "Monotone and 1-1 Sets," *Journal of the Australian Mathematical Society, Series A*, 33,62-75 (with R.W.Robinson).
3. (1982) "Resurrecting the Discounted Cash Equivalent Flow," *Abacus*, 18-1,83-90.4.
4. (1982) "Differentiating a Determinant," *The American Statistician*, 36, 3.
5. (1983) "Measures of Risk Aversion with Many Commodities," *Economics Letters*, 11, 93-100.
6. (1983) "Inconsistent Theories as Scientific Objectives," *Journal of the Philosophy of Science*, 50,3,453-470.
7. (1983) "Testing for Random Pairing," *Journal of the American Statistical Association*, 78, 382,332-336 (with Piet de Jong and Malcolm Greig).
8. (1984) "Compound Poisson Models for Economic Variable Movements," *Sankhya Series B*, 46,2, 174-187 (with E. Seneta).
9. (1985) "The Measurement of Capital Utilization Rates," *Communications in Statistics: Theory and Methods*, A14, 6,1301-1314.
10. (1985) "Project Evaluations and Accounting Income Forecasts," *Abacus*, Vol. 21, No.2, 197-202.
11. (1986) "Utility Correlations in Probabilistic Choice Modeling," *Economics Letters*, 20, 241-245.
12. (1986) "Mode Choice for Urban Travelers in Sydney," Part 8 of the Proceedings of the 13th ARRB and 5th RAAA Conference. *Adelaide*, August 25-29 (with R. Groenhout and M. Ranjbar).
13. (1987) "Simulation of Estimates Using the Empirical Characteristic Function," *International Statistical Review*, 55,2,153-161 (with E. Seneta).
14. (1987) "Chebyshev Polynomial Approximations for Characteristic Function Estimation," *Journal of the Royal Statistical Society, Series B*, 49-2,163-169 (with E. Seneta).

15. (1987) "Modeling Sydney Work Trip Travel Mode Choices," *Journal of Transportation Economics and Policy*, XXI, No.2, 135-150 (with R. Groenhout).
16. (1987) "Optimal Duration and Speed in the Long Run," *Review of Economic Studies*, LIV, 695-700.
17. (1988) "Decision Theory with Complex Uncertainties," *Synthese*, 75,25-44 (with James C. Owings).
18. (1988) "Risk Measurement in Semimartingale Models with Multiple Consumption Goods," *Journal of Economic Theory*, 44, 2,398-412.
19. (1989) "Stochastic Stability in a Rational Expectations Model of a Small Open Economy," *Economica*, 56, No.221, 97-108 (with E. Kiernan).
20. (1989) "Dynamic Factor Demands with some Immediately Productive Quasi Fixed Factors," *Journal of Econometrics*, 42,275-283 (with I. Prucha).
21. (1989) "Characteristic Function Estimation Using Maximum Likelihood on Transformed Variables," *Journal of the Royal Statistical Society Series B*, 51,2,281-285 (with E. Seneta).
22. (1989) "The Multinomial Option Pricing Model and its Brownian and Poisson Limits," *Review of Financial Studies*, 2,2,251-265 (with F. Milne and H. Shefrin).
23. (1989) "On the Monotonicity of the Labor-Capital Ratio in Sraffa's Model," *Journal of Economics*, 51,1, 101-107 (with E.Seneta).
24. (1990) "The V.G. Model for Share Market Returns," *Journal of Business*, 63,4,511-52 (with E. Seneta).
25. (1991) "Design and Marketing of Financial Products," *The Review of Financial Studies* 4,2,361-384 (with B. Soubra).
26. (1991) "A Characterization of Complete Security Markets on a Brownian Filtration," *Mathematical Finance*, 1,3,31-44 (with R.A. Jarrow).
27. (1991) "Option Pricing with VG Martingale Components," *Mathematical Finance*, 1,4 39-56 (with F. Milne).
28. (1993) "Informational Content in Interest Rate Term Structures," *The Review of Economics and Statistics*, 75,4, 695-699 (with R. O. Edmister).
29. (1993) "Diffusion Coefficient Estimation and Asset Pricing when Risk Premia and Sensitivities are Time Varying," *Mathematical Finance*, 3,85-100, (with Marc Chesney, Robert J. Elliott and Hailiang Yang).
30. (1994) "Contingent Claims Valued and Hedged by Pricing and Investing in a Basis," *Mathematical Finance*, 4,3,223-245 (with F. Milne).
31. (1995) "Option Pricing Using the Term Structure of Interest Rates to Hedge Systematic Discontinuities in Asset Returns," *Mathematical Finance*, 5,311-336, (with R.A. Jarrow).
32. (1995) "Approaches to the Solution of Stochastic Intertemporal Consumption Models," *Australian Economic Papers*, 34,86-103 (with Russel J. Cooper and Keith McLaren).
33. (1995) "Pricing Via Multiplicative Price Decomposition," *Journal of Financial Engineering*, 4,247-262 (with Robert Elliott, William Hunter and P. Ekkehard Kopp).
34. (1997) "Filtering Derivative Security Valuations from Market Prices," (with Robert Elliott and Charles Lahaie) in *Mathematics of Derivative Securities*, eds. Michael A. H. Dempster and Stanley R. Pliska, Cambridge University Press.
35. (1997) "Is Mean-Variance Theory Vacuous: or Was Beta Still Born," (with Robert Jarrow) *European Finance Review*, 1, 15-30.
36. (1998) "Default Risk," in *Statistics in Finance*, eds. David Hand and Saul D. Jacka, Arnold Applications in Statistics.
37. (1998) "Pricing the Risks of Default", (with H. Unal) *Review of Derivatives Research*, 2, 121-160.

38. (1998) "The Discrete Time Equivalent Martingale Measure," (with R. Elliott) *Mathematical Finance*, 8,127-152.
39. (1998) "The Variance Gamma Process and Option Pricing," (with Peter Carr and Eric Chang) *European Finance Review*, 2,79-105.
40. (1998) "Towards a Theory of Volatility Trading," (with Peter Carr) in *Volatility* edited by Robert A. Jarrow, Risk Books.
41. (1999) "Valuing and Hedging Contingent Claims on Semimartingales," (with R.A. Jarrow) *Finance and Stochastics*, 3, 111-134.
42. (1999) "The Second Fundamental Theorem of Asset Pricing Theory," (with Robert Jarrow and Xing Jin) *Mathematical Finance*, 9,255-273.
43. (1999) "Pricing Continuous Time Asian Options: A Comparison of Monte Carlo and Laplace Transform Inversion Methods," (with Michael Fu and Tong Wang) *Journal of Computational Finance*, 2,49- 74.
44. (1999) "Introducing the Covariance Swap," (with Peter Carr), *Risk*, February.
45. (1999) "Option Valuation Using the Fast Fourier Transform," *Journal of Computational Finance*, 2,61- 73.
46. (2000) "Spanning and Derivative Security Valuation" (with G. Bakshi) *Journal of Financial Economics*, 55,205-238.
47. (2000) " A Two Factor Hazard Rate Model for Pricing Risky Debt and the Term Structure of Credit Spreads," (with H. Unal) *Journal of Financial and Quantitative Analysis*, 35,43-65.
48. (2000) "Arbitrage, Martingales and Private Monetary Value," (with R.A.Jarrow) *Journal of Risk*, 3,1,73-90.
- 49.(2000) "Investing in Skews," (with Gavin McPhail) *Journal of Risk Finance*, 2,1,10- 18.
50. (2000), "Going with the Flow," (with P. Carr and A. Lipton) *Risk*, August 2000,85- 89.
51. (2001) "Optimal Investment in Derivative Securities," (with Peter Carr and Xing Jin) *Finance and Stochastics*, 5, 1,33-59
52. (2001) "Time Changes for Levy Processes," 96 (with Helyette Geman and Marc Yor) *Mathematical Finance*, 11,1,79-51.
53. (2001) "Optimal Positioning in Derivatives," (with P. Carr) *Quantitative Finance*, 1,1,19-37.
54. (2001) "Pricing and Hedging in Incomplete Markets," (with P. Carr and H. Geman) *Journal of Financial Economics*,62,131-167.
55. (2001) "Pricing the Risks of Default" in *Mastering Risk* Ed. C. Alexander, Financial Times Press.
56. (2001) "Purely Discontinuous Asset Price Processes," in *Advances in Mathematical Finance* Eds. J. Cvitanic, E. Jouini and M. Musiela Cambridge University Press.
57. (2001) "Asset Prices are Brownian Motion: Only in Business Time," (with H. Geman and M. Yor) *Quantitative Analysis of Financial Markets*, vol. 2, ed. M. Avellanada, World Scientific Press.
58. (2001) "Determining Volatility Surfaces and Option Values from an Implied Volatility Smile," (with P. Carr) *Quantitative Analysis of Financial Markets*, vol. 2. ed. M. Avellanada, World Scientific Press.
59. (2001), "Towards a Theory of Volatility Trading," with P. Carr in *Advances in Mathematical Finance* Eds. J. Cvitanic, E. Jouini and M. Musiela Cambridge University Press.
- 60.(2001) "Pricing American Options: A comparison of Monte Carlo Simulation Approaches," (with M. Fu, S. Laprise, Y. Su, and R. Wu) *Journal of Computational Finance*, 2, 61-73.
61. (2002)"Stochastic Volatility, Jumps and Hidden Time Changes," (with H. Geman and M. Yor) *Finance and Stochastics*, 63-90.

62. (2002) "The Fine Structure of Asset Returns: An Empirical Investigation," (with P. Carr, H. Geman and M. Yor) *Journal of Business*, 75, 305-332.
63. (2002) "Pricing Average Rate Contingent Claims," (with G. Bakshi) *Journal of Financial and Quantitative Analysis*, 37, March.
64. (2002) "Option Pricing Using Variance Gamma Markov Chains," (with M. Konikov), *Review of Derivatives Research*, 5, 81-115.
65. (2002) "Pricing the Risk of Recovery in Default with APR violation," (with H. Unal and L. Guntay), forthcoming in the *Journal of Banking and Finance*, May 2003.
66. (2002) "Incomplete Diversification and Asset Pricing," (with F. Milne and R. Elliott), in *Advances in Finance and Stochastics, Essays in Honor of Dieter Sondermann, K. Sandmann and P. Schonbucher (Eds.)*, Springer-Verlag, Berlin.
67. (2002) "Making Markov Martingales meet Marginals: with explicit constructions," (with Marc Yor) *Bernoulli*, 8, 509-536.
68. (2003) "Stock Return Characteristics, Skew Laws, and the Differential Pricing of Individual Stock Options," (with G. Bakshi and N. Kapadia), *The Review of Financial Studies*, 16, 101-143.
69. (2003) "The Effect of Model Risk on the Valuation of Barrier Options," (with Georges Courtadon and Ali Hirska) *Journal of Risk Finance*, 4, 47-55.
70. (2003) "Stochastic Volatility for Levy Processes," (with P. Carr, H. Geman, and M. Yor) *Mathematical Finance*, 13, 345-382.
71. (2003) "Pricing American Options under Variance Gamma," (with Ali Hirska) *Journal of Computational Finance*, 7, 2, 63-80. .
72. (2004) "Monitored Financial Equilibria," *Journal of Banking and Finance*, 28, 2213-2235.
73. (2004) "Understanding Option Prices," (with Ajay Khanna) *Quantitative Finance*, 4, 55-63.
74. (2005) "Risks in Returns: A Pure Jump Perspective," (with H. Geman) in "Exotic Options and Advanced Levy Models," Eds. A. Kyprianou, W. Schoutens, and P. Willmott, Wiley.
75. (2005) "From Local Volatility to Local Levy Models," (with P. Carr, H. Geman and M. Yor) *Quantitative Finance*, 4, 581-588
76. (2005) "Empirical Examination of the Variance Gamma Model for Foreign Exchange Currency Options," (with E. Daal), *Journal of Business*, 78, 2121-2152.
77. (2005) "Pricing Options on Realized Variance," (with Peter Carr, H. Geman and M. Yor) *Finance and Stochastics*, 9, 453-475.
78. (2006) "Investigating the Sources of Default: Lessons from Empirically Evaluating Credit Risk Models," (with G. Bakshi and F. Zhang) *Journal of Business*, 79, 1955-1988.
79. (2005) "A Note on Sufficient Conditions for No Arbitrage," (with Peter Carr) *Finance Research Letters*, 2, 125-130.
80. (2005) "Asset Allocation for CARA Utility with Multivariate Levy Returns," (with Ju-Yi Yen) forthcoming in *Handbook of Financial Engineering*,
81. (2006) "Ito's Integrated Formula for Strict Local Martingales," (with Marc Yor) in *In Memoriam Paul-Andre Meyer*, (Eds) Michel Emry and Marc Yor, *Lecture Notes in Mathematics 1874*, Springer , Berlin.
82. (2006) "Credit Default and Basket Default Swaps," (with M. Konikov) , *Journal of Credit Risk*, 2, 67-87.
83. (2007) "Self-Decomposability and Option Pricing," (with P. Carr, H. Geman, and M. Yor) *Mathematical Finance*, 17, 31-57.
84. (2007) "Probing Options Markets for Information," (with H. Geman and M. Yor) forthcoming in *Methodology and Computing in Applied Probability*.

- 85.(2007) "Correlation and the Pricing of Risks," (with M. Atlan, H. Geman, and M. Yor) forthcoming in the Annals of Finance
86. (2006) "Equilibrium Asset Pricing with Non-Gaussian Returns and Exponential Utility." Quantitative Finance, 6, 455-463.
- 87.(2006) "A Theory of Volatility Spreads" (with G. Bakshi) Management Science, 52, 1945-1956.

#### **PAPERS COMPLETED:**

88. "Asset Pricing in an Incomplete Market with a Locally Risky Discount Factor,"(with S. Acharya) (1995).
89. "Estimation of Statistical and Risk-Neutral Densities by Hermite Polynomial Approximation: With an Application to Eurodollar Futures Options," (with P. Abken and S. Ramamurtie) (1996).
90. "Crash Discovery in Options Markets,"(with G. Bakshi) (1999).
91. "Risk Aversion, Physical Skew and Kurtosis, and the Dichotomy between Risk - Neutral and Physical Index Volatility," (with G. Bakshi and I. Kirgiz). (2001).
92. "Factor Models for Option Pricing,"(with Peter Carr) (2001).
93. "On the Nature of Options,"(with P. Carr) (2001).
94. "Recovery in Default Risk Modeling: Theoretical Foundations and Empirical Applications," (with G. Bakshi and F. Zhang) (2001).
95. "Reduction Method for Valuing Derivative Securities,"(with P. Carr and A. Lipton) (2001).
96. "Option Pricing and Heat Transfer," (with P. Carr and A. Lipton) (2002).
97. "Multiple Prior Asset Pricing Models," (with R. Elliott) (2003)
98. "Absence of Arbitrage and Local Levy Models," (with P. Carr, H. Geman and M. Yor) (2003)
99. "Bell Shaped Returns,"(with Ajay Khanna, H. Geman and M. Yor). (2003)
100. "Pricing the Risks of Deposit Insurance," (with H. Unal) (2004)
101. "Representing the CGMY and Meixner Processes as Time Changed Brownian Motions," (with Marc Yor) (2006).
102. "Pricing Equity Default Swaps under the CGMY Levy Model," (with S. Asmussen and M. Pistorious) (2005)
103. "Coherent Measurement of Factor Risks" (with A. Cherny) (2005)
104. "Pricing and Hedging in Incomplete Markets with Coherent Risk," (with A. Cherny) (2005)
105. "CAPM, Rewards and Empirical Asset Pricing with Coherent Risk," (with A. Cherny) (2005)
106. "The Distribution of Risk Aversion," (with G. Bakshi) (2005)
107. "Designing Countercyclical and Risk Based Aggregate Deposit Insurance Premia," (with Haluk Unal) (2006).
108. "Sato Processes and the Valuation of Structured Products," (with Ernst Eberlein) (2006).
109. "Measuring the Degree of Market Efficiency," (with Alexander Cherny) (2006).
110. "From Required Returns to Required Sharpe Ratios," (with Ernst Eberlein) (2007).

**CONFERENCES AND OTHER PRESENTATIONS**

1. 1989, ORSA, New York.  
Presentation of Paper: "Design and Marketing of Financial Products."
2. 1990, WFA, Santa Barbara.  
Presentation of Paper: "Design and Marketing of Financial Products."  
Discussant of Paper: "Asset Pricing for General Stochastic Processes" by K. Back
3. 1990, World Econometrics Society, Barcelona.  
Presentation of Paper: "Option Pricing for VG Martingale Components."
4. 1990, AFA, Washington D.C.  
Presentation of Paper: "Empirical Testing of Multi-Good Consumption Based Asset Pricing Models."  
Presentation of Paper: "Design and Marketing of Financial Products."
5. 1991, Derivative Securities Symposium, Queen's University.  
Presentation of Paper: "Valuing and Hedging Contingent Claims by Basis Investment and Pricing."
6. 1991, WFA, Jackson Hole.  
Presentation of Paper: "Empirical Testing of Multi-Good Consumption Based Asset Pricing Models."  
Presentation of Paper: "Option Pricing for VG Martingale Components."
7. 1991, Second Conference on Financial Economics and Accounting, SUNY Buffalo.  
Presentation of Paper: "Option Pricing Using the Term Structure of Interest Rates to Hedge Systematic Discontinuities in Asset Returns."  
Discussant of Paper: "An Empirical Study of Firm's Cash Disbursement Methods and their Interrelated Information Content" by Sreenivas Kamma, Steven Raymar and George Kanatas.
8. 1991, AFA, New Orleans.  
Presentation of Paper: "Option Pricing Using the Term Structure of Interest Rates to Hedge Systematic Discontinuities in Asset Returns."
9. 1992, Joint NSF INRIA Workshop in Mathematical Finance, Paris.  
Presentation of Paper: "Valuing and Hedging Contingent Claims on Semimartingales."
10. 1992, Eastern Economic Association, New York.  
Organized two sessions on Derivative Securities. Session Chair for Derivative Securities I.  
Presentation of Paper: "Option Pricing Using the Term Structure of Interest Rates to Hedge Systematic Discontinuities in Asset Returns."  
Discussant of Paper: "Stochastic Interest Rates and The American Exercise Feature: With Application to International Money Claims," by Kaushik Amin.
11. 1992, Derivative Securities Symposium, Queen's University.  
Presentation of Paper: "Option Pricing Using the Term Structure of Interest Rates to Hedge Systematic Discontinuities in Asset Returns."
12. 1992, Canadian Statistical Society, Edmonton.  
Invited Address: "Valuing and Hedging Contingent Claims on Semimartingales."
13. 1992, Merrill Lynch, New York, October.  
Invited Address on Surveying the Valuation Interest Rate Contingent Claims.
14. 1992, Conference in Financial Economics and Accounting, Stern School of Business, New York University, November.



- Presentation of Paper: "Contingent Claims Valued and Hedged by Pricing and Investing in a Basis."
15. 1993, Conference on Optimal Security Design, Rutgers University, April.  
Presentation of Paper: " Capital Structure and the Design of Managerial Compensation."
  16. 1993, Society for Industrial and Applied Mathematics (SIAM), April.  
Invited Address on the Applications of Mathematics to Finance.
  17. 1993, Derivative Securities Symposium, Queen's University.  
Presentation of Paper: "Pricing the Risks of Default."
  18. 1993, WFA, Whistler Resort, British Columbia.  
Presentation of Paper: "Contingent Claims Valued and Hedged by Pricing and Investing in a Basis. "
  19. 1993, AFFI, French Finance Association Meetings, La Baule, France, June.  
Presentation of Paper: "Pricing the Risks of Default. "
  20. 1993, Seminar at McGill University, September.  
Presentation of Paper: "Pricing the Risks of Default."
  21. 1993, Seminar at Columbia University, October.  
Presentation of Paper: "Pricing the Risks of Default."
  22. 1994, Allied Social Science Association Meetings, January.  
Presentation of Paper: " Capital Structure and the Design of Managerial Compensation. "
  23. 1994, Derivative Securities Conference, Cornell University, May.  
Presentation of Paper: "Valuing and Hedging Contingent Claims on Semimartingales. "
  24. 1994, Rutgers University Conference, May.  
Chair: "Session on Options Markets."
  25. 1994, Joint Math. Econ. and Math. Finance Meeting and AFFI, Tunis, June.  
Presentation of Paper: "Valuing and Hedging Contingent Claims on Semimartingales."
  26. 1994, Wisconsin Finance Symposium, Madison, Wisconsin, August.  
Presentation of Paper: "Pricing the Risks of Default."
  27. 1994, Northern Finance Association Meeting, Vancouver, September.  
Presentation of Paper: "Pricing the Risks of Default."
  28. 1994, Conference in Financial Economics and Accounting, University of Michigan, October.  
Presentation of Paper: "Pricing the Risks of Default."
  29. 1994, Seminar at the University of Toronto, November.  
Presentation of Paper: "Pricing the Risks of Default."
  30. 1995, Seminar at the Wharton School, February.  
Presentation of Paper: "Pricing the Risks of Default."
  31. 1995, Federal Reserve Bank of Atlanta, Financial Markets Conference, Miami, March 2-4.  
Presentation of Paper: "Pricing the Risks of Default."
  32. 1995, Derivative Securities Conference, Cornell University, April.  
Presentation of Paper: "Pricing the Risks of Default."
  33. 1995, NBER Conference on Financial Risk Assessment and Management, Boston, May,  
Presentation of Paper: "Pricing the Risks of Default."
  34. 1995, Financial Mathematics Workshop at the Isaac Newton Institute, Cambridge, England, May 7- June 4, 1995.  
Presentation of Paper: "Pricing the Risks of Default."  
Presentation of Paper: "Filtering Derivative Security Valuations from Market Prices."
  35. 1995, Seminar at ESSEC, Paris, France, June 6.  
Presentation of Paper: "Pricing the Risks of Default."
  36. 1995, WF A, Aspen Colorado, June.

- Presentation of Paper: " Asset Pricing in an Incomplete Market with a Locally Risky Discount Factor."
37. 1995, AFFI, Bordeaux, June.  
Presentation of Paper: "Pricing Continuous Time Asian Options: A Comparison of Analytical and Monte Carlo Methods."  
Presentation of paper: " Asset Pricing in an Incomplete Market with a Locally Risky Discount Factor."
38. 1995, Seminar at Hong Kong University of Science and Technology, August 2.  
Presentation of Paper: "Pricing the Risks of Default."
39. 1995, Risk Conference on Advanced Mathematics for Derivatives, New York, September 25-26.  
Presentation of Paper: "Pricing and Hedging by Arbitrage in Continuous Time."
40. 1995, Workshop on Mathematical Finance, Columbia University, October 8-9.  
Presentation of Paper: "Volatility Smiles, Skewness Premia and Risk Metrics: Applications of a Four Parameter Closed Form Generalization of Geometric Brownian Motion to the Pricing of Options."
41. 1995, Invited Participant at the NBER Conference on Asset Pricing, Chicago, October 12-14.
42. 1995, Seminar at the Courant Institute, New York University, October 26.  
Presentation of Paper: "Volatility Smiles, Skewness Premia and Risk Metrics: Applications of a Four Parameter Closed Form Generalization of Geometric Brownian Motion to the Pricing of Options. "
43. 1995, Informs, New Orleans, October 29-31.  
Presentation of Paper: "Pricing Continuous Time Asian Options: A Comparison of Analytical and Monte Carlo Methods. "
44. 1995, Sixth Annual Conference on Financial Economics and Accounting, University of Maryland, November 10-11.  
Discussant of Paper: "Discretionary Volatility Trading in Options Markets" by J. Cherian.
45. 1995, Seminar at Cornell University, November 30.  
Presentation of Paper: "Volatility Smiles, Skewness Premia and Risk Metrics: Applications of a Four Parameter Closed Form Generalization of Geometric Brownian Motion to the Pricing of Options."
46. 1996, Mathematical Problems in Finance: Frontiers in Pricing and Risk Management of Financial Products Conference, Institute of Advanced Study, Princeton University, April 11-16.  
Presentation of Paper: "Arbitrage, Rational Bubbles, and Martingale Measures."
47. 1996, Sixth Annual Derivatives Securities Conference, Queens University, April 25- 27.  
Presentation of Paper: "Arbitrage, Rational Bubbles, and Martingale Measures. "
48. 1996, Workshop on the Mathematics of Finance, CIRANO, Montreal, April 30-May 3.  
Presentation of Paper: "Volatility Smiles, Skewness Premia and Risk Metrics: Applications of a Four Parameter Closed Form Generalization of Geometric Brownian Motion to the Pricing of Options."
49. 1996, The Second International Finance Conference, May 24. Georgia Tech University, Atlanta.  
Discussant of Paper: "Asset Pricing under Political Risk: Theory and Evidence from Hong Kong Stock Options," by Joseph Cherian.
50. 1996, Conference on Mathematical Finance, June 3-8, Aarhus University, Denmark.

- Presentation of Paper: "Volatility Smiles, Skewness Premia and Risk Metrics: Applications of a Four Parameter Closed Form Generalization of Geometric Brownian Motion to the Pricing of Options."
51. 1996, Western Finance Association, June 19-22, Sun River Valley, Oregon.  
Presentation of Paper: "Estimation of Statistical and Risk-Neutral Densities by Hermite Polynomial Approximation: With an Application to Eurodollar Futures Options," (with Peter A. Abken and S. Ramamurtie)  
Discussant of Paper: "A Non-Parametric Model of Term Structure Dynamics and the Market Price of Interest Rate Risk," by Richard Stanton.
  52. 1996, AFFI, French Finance Association, June 24-26, Geneva.  
Presentation of Paper: "Volatility Smiles, Skewness Premia and Risk Metrics: Applications of a Four Parameter Closed Form Generalization of Geometric Brownian Motion to the Pricing of Options."
  53. 1996, ESSEC, June 27, Paris.  
Presentation of Paper: "Volatility Smiles, Skewness Premia and Risk Metrics: Applications of a Four Parameter Closed Form Generalization of Geometric Brownian Motion to the Pricing of Options."
  54. 1996, Society for Industrial and Applied Mathematics, Mini Symposium on Mathematical Finance July 25, 1996.  
Presentation of Paper: "Topology on Wall Street."
  55. 1996, November, Risk Conference, New York.  
Presentation of Paper: "Optimal Positioning in Derivative Securities."
  56. 1997, Henri Poincare Institute, January, Paris.  
Presentation of Paper: "Optimal Positioning in Derivative Securities."
  57. 1997, University of Paris Dauphine, January, Paris.  
Presentation of Paper: "Optimal Positioning in Derivative Securities."
  58. 1997, Fields Institute, February, Toronto.  
Presentation of Paper: "Optimal Positioning in Derivative Securities."
  59. 1997, University of Waterloo, February, Waterloo.  
Presentation of Paper: "The Second Fundamental Theorem of Asset Pricing."
  60. 1997, Cornell University, March, Ithaca, New York.  
Presentation of Paper: "Optimal Positioning in Derivative Securities."
  61. 1997, University of Chicago, April, Chicago.  
Presentation of Paper: "The VG Option Pricing Model."
  62. 1997, Risk Conference, June, Chicago.  
Presentation of Paper: "Optimal Positioning in Derivative Securities."
  63. 1997, AFFI, Grenoble, France.  
Presentation of Paper: "Beyond the American Put."
  64. 1997, QMF, Quantitative Methods in Finance, Cairns, Australia.  
Presentation of Paper: "Optimal Positioning in Derivative Securities."
  65. 1997, Two Day Course on Credit Derivatives, University of Zurich, October 6-8.
  66. 1997, Purdue University, October, Lafayette, Indiana.  
Presentation of Paper: "Optimal Positioning in Derivative Securities."
  67. 1998, University of Wisconsin, March, Madison.  
Presentation of Paper: "Optimal Positioning in Derivative Securities."
  68. 1998, Mathematical Finance Day, April, Boston,

- Invited Address: "The Case for Purely Discontinuous Asset Price Processes."
69. 1998, Matlab Financial Engineering Conference, June, New York.  
Invited Address: "The Statistical, Risk Neutral and Position Measures."
70. 1998, International Association of Financial Engineers Meeting, September, New York.  
Presentation of Paper: "Optimal Positioning in Derivative Securities."
71. 1998, Seminar at Princeton University, October, Princeton, New Jersey.  
Presentation of Paper: "The Variance Gamma Process and Optimal Positioning."
72. 1998, Seminar at Courant Institute, October, New York.  
Presentation of Paper: "Asset Prices are Brownian Motion: Only in Business Time."
73. 1998, Midwest Probability Colloquium, Northwestern University, October, Skokie.  
Invited Address: "Purely Discontinuous Asset Price Processes and Optimal Derivative Investment."
74. 1998, Seminar in Financial Mathematics, University of Chicago, October, Chicago, Illinois.
75. 1998, International Press Lectures, University of California at Irvine, November, Irvine.  
Invited Address: "Discontinuous Price Processes and Derivative Investment."
76. 1998, Quantitative Methods in Finance Conference, December, Sydney, Australia.  
Invited Address: "Discontinuous Price Processes and Brownian Motion."
77. 1999, Seminar at ESSEC, January.  
Invited Talk on "Purely Discontinuous Asset Price Processes."
78. 1999, Seminar at University of Paris IX Dauphine.  
Invited Talk on "Purely Discontinuous Asset Price Processes."
79. 1999, Seminar at the Universite Franche-Comte, Besancon, France.  
Invited Talk on "Purely Discontinuous Asset Price Processes."  
Presentation of Paper: "Asset Prices are Brownian Motion: Only in Business Time."
80. 1999, Bachelier Seminar at the Institute Henri Poincare.  
Presentation of talk on "Purely Discontinuous Asset Price Processes."
81. 1999, Workshop in Mathematical Finance, Oberwolfach, Germany, March.  
Presentation of talk on "Purely Discontinuous Asset Price Processes."
82. 1999, Berkeley Conference on Finance.  
Presentation of Paper, "What is the Probability of a Stock Market Crash?"
83. 1999, Financial Engineering Conference, New York, April.  
Presentation of Paper: "Asset Prices are Brownian Motion: Only in Business Time."
84. 1999, Derivative Securities Conference, Boston, April.  
Presentation of Paper: "The Second Fundamental Theorem of Asset Pricing."
85. 1999, Global Derivatives Conference, Paris, April.  
Invited Address, "Default Pricing Models."
86. 1999, Conference on Numerical Analysis in Finance, Paris, June.  
Invited Address, "Issues in Pricing and Hedging Exotic Derivatives."
87. 1999, International Conference on Mathematical Finance, Hammamet-Tunisia, June.  
Invited Address, "Issues in Pricing and Hedging Exotic Derivatives."
88. 1999, Credit Risk Summit, New York, September.  
Invited Address, "Pricing the Risks of Default."
89. 1999, Credit Risk Summit, London, October.  
Invited Address, "Pricing the Risks of Default."
90. 1999, Fields Institute, Toronto, October.  
Invited Address, "Purely Discontinuous Asset Price Processes."

91. 1999, Financial Engineering and Insurance Workshop, Princeton, November.  
Invited Address, "The Fine Structure of Asset Returns: An Empirical Investigation."
92. 1999, Risk Conference, Maths Week, London, November.  
Invited Address, "Purely Discontinuous Asset Price Processes."
93. 1999, Risk Conference, Maths Week, New York, November.  
Invited Address, "Purely Discontinuous Asset Price Processes."
94. 1999, ICBI Conference on Risk Management, Geneva, November.  
Invited Address: "Pricing the Risks of Default."
95. 2000, International Conference, Le Mans France, January.  
Invited Address: "Purely Discontinuous Asset Price Processes."
  
96. 2000, ETH Seminar, Zurich, January.  
Presentation of Paper: "The Fine Structure of Asset Returns: An Empirical Investigation."
97. 2000, University of Freiberg, Freiburg, January.  
Presentation of Paper: "The Fine Structure of Asset Returns: An Empirical Investigation."
98. 2000, University of Chicago, March.  
Presentation of Paper: "The Fine Structure of Asset Returns: An Empirical Investigation."
99. 2000, Global Derivatives 2000, Paris, April.  
Presentation of Paper: "The Fine Structure of Asset Returns: An Empirical Investigation."
100. 2000, Risk 2000, Paris, April.  
Invited Address: "Pricing the Risks of Default."
101. 2000, University of Massachusetts-Amherst, April.  
Presentation of Paper: "The Fine Structure of Asset Returns: An Empirical Investigation."
102. 2000, Bachelor Finance Congress, Paris, Member of Program Committee.  
Presentation of Paper: "Pricing Options of All Strikes and Maturities."
103. 2000 European Congress of Mathematics, Barcelona.  
Presentation of Paper: "The Fine Structure of Asset Returns: An Empirical Investigation."
104. 2000, Invited Speaker, Quantitative Risk Management in Finance, Carnegie Mellon University, August.  
Presentation of Paper: "The Fine Structure of Asset Returns: An Empirical Investigation."
105. 2000, Courant Institute, New York University, September.  
Presentation of Paper: "The Fine Structure of Asset Returns: An Empirical Investigation."
106. 2000, Credit Risk Summit, Risk, September, New York.  
Invited Talk: "Hazard Rates of Default for Effective Credit Risk Modeling."
107. 2000, Credit Risk Summit, Risk, September, New York.  
Invited Talk: "Hazard Rates of Default for Effective Credit Risk Modeling."
108. 2000, Math Week, Risk, November, New York.  
Invited Talk: "Levy Processes in Option Pricing, VG and Beyond."
109. 2000, Math Week, Risk, November, London.  
Invited Talk: "Levy Processes in Option Pricing, VG and Beyond."
110. 2000, 7<sup>th</sup> Annual Risk Management Conference, ICBI, December, Geneva.  
Invited Talk: "Exploring the Fine Structure of Asset Returns."
111. 2000, Columbia-Jaffe Conference, Tokyo, December.  
Presentation of Paper: "The Fine Structure of Asset Returns: An Empirical Investigation."
112. 2000, Tokyo Quants Institute, Tokyo, December.  
Invited Talk: "Levy Processes in Option Pricing, VG and Beyond."
113. 2001, Ecole Poly technique, Paris, January.  
Invited Talk: "Levy Processes in Option Pricing."

114. 2001, Seminar at ESSEC, Paris, January.  
Presentation of Paper: "Pricing and Hedging in Incomplete Markets."
115. 2001, Seminar at Princeton, February.  
Presentation of Paper: "Pricing and Hedging in Incomplete Markets."
116. 2001, Seminar at UBC, March.  
Presentation of Paper: "Stochastic Volatility for Levy Processes."
117. 2001, Seminar at Purdue, March.  
Presentation of Paper: "Stochastic Volatility for Levy Processes."
118. 2001, Seminar at Cornell, April.
119. 2001, Conference at McMaster University, April.  
Presentation of Paper: "Stochastic Volatility for Levy Processes."
120. 2001, Derivative Securities Conference, New York, April.  
Presentation of Paper: "Stochastic Volatility via Markov Chains."
121. 2001, ICBI Conference at Juans-les Pins, May.  
Presentation of Paper: "Stochastic Volatility for Levy Processes."
122. 2001, Course at Juans-les Pins, May.  
Taught one day course on Levy Processes.
123. 2001, Eurandom Workshop on Levy Processes, Eindhoven, Netherlands, June.  
Presentation of Paper: "Stochastic Volatility for Levy Processes."
124. 2001, Workshop at Financial Mathematics and Econometrics, Montreal, June.  
Presentation of Paper: "Stochastic Volatility for Levy Processes."
125. 2001, Summer School in Stochastics and Finance, Barcelona, July.  
Two lecture course on Option Pricing Using Levy Processes.
126. 2001, Maths Week, Risk Conference, New York, November.  
Invited Address: Default Risk Modeling.
127. 2001, Maths Week, Risk Conference, London, November.  
Invited Address: Default Risk Modeling.
128. 2001, ICBI Conference on Risk Management, Geneva, December.  
Invited Address: Stochastic Volatility for Levy Processes.
129. 2001, Quantitative Methods in Finance, Sydney, December.  
Invited Address: Stochastic Volatility for Levy Processes.
130. 2002, Second Levy Process Conference, University of Aarhus, Denmark, January.
131. 2002, Volatility and Risk, IIR Conference, London, February.  
Invited Address: Stochastic Volatility and Option Pricing.
132. 2002, Conference on Default Risk, HEC Montreal, April.  
Invited Speaker: Recovery Pricing in Default.
133. 2002, University of Southern California, Workshop, April.  
Invited Speaker: Option Pricing at the Forefront.
134. 2002, Mathematics Society Conference, Ascona, Switzerland, May.  
Invited Speaker: Levy Processes in Finance.
135. 2002, ICBI Conference, Barcelona, May.  
Invited Speaker: Levy Processes in Option Pricing.
136. 2002, Bachelier Finance Society Congress, Crete, June.  
Presentation of Paper: Making Markov Martingales Meet Martingales.
137. 2002, Workshop in Mathematical Finance, Scuola Normale, Pisa  
Invited Course: Levy Processes in Finance
138. 2002, Quantitative Finance, New York, Risk Conference  
Invited Presentation: Stochastic Volatility for Levy Processes

139. 2002, Quantitative Finance, London, Risk Conference  
Invited Presentation: Stochastic Volatility for Levy Processes
140. 2002, Institute Henri Poincare, Bachelier Meeting  
Invited Presentation: Stochastic Volatility for Levy Processes
141. 2002, Columbia University, New York.  
Seminar Presentation: Stochastic Volatility and Martingale Marginals
142. 2002, Workshop in Mathematical Finance, Leiden, The Netherlands  
Invited Speaker: Stochastic Volatility and Martingale Marginals
143. 2003, Cornell Theory Center, New York  
Invited Presentation: Understanding Option Prices
144. 2003, Stanford University, February.  
Seminar Presentation: The Fine Structure of Asset Returns.
145. 2003, Risk Conference Paris, April.  
Invited Speaker: Stochastic Volatility for Levy Processes
146. 2003, AFFI Conference, Lyon, June.  
Invited Address: Option Pricing with Discontinuous Processes
147. 2003, Levy Process Conference  
Invited Speaker: Pricing Options on Realized Variance
148. 2003, ETH Workshop on Computational Finance, Zurich  
Invited Address: Stochastic Processes for Option Pricing
149. 2003, Risk Conference, Quant Congress  
Invited Speaker: Pricing Options on Realized Variance
150. 2003, Tilburg University, November  
Seminar: Pricing Options on Realized Variance
151. 2003, Edmonton, November  
Seminar: Pricing Options on Realized Variance
152. 2003, FDIC, December  
Invited Speaker: Pricing the Risks of Deposit Insurance
153. 2004, Paris, Dauphine, January  
Seminar: Pricing the Risks of Deposit Insurance
154. 2004, Cornell, March  
Seminar: Correlation and the Pricing of Risks
155. 2004, Montreal, April  
Invited Address: Pricing the Risks of Deposit Insurance
156. 2004, London, April, Risk Europe 2004  
Invited Address: Investment in Stock and Options
156. 2004, Cambridge UK, April  
Seminar: Correlation and the Pricing of Risks
157. 2004, Eindhoven, Workshop in Exotic Options using Advanced Levy Process Models  
Invited Address: From Local Volatility to Local Levy Models
158. 2004, Madrid, May ICBI Conference on Global Derivatives and Risk Management  
Pre Conference Summit: Filtered Returns Processes, Asset Allocation and  
Derivative Investment.  
Invited Address: Pricing Options on Realized Variance.
159. 2004, Banff, June, Workshop on Semimartingale Theory Applied to Finance  
Invited Address, Pricing Options on Realized Variation
160. 2004, Boston, June, Risk USA  
Invited Address: Local Volatility to Local Levy Processes: Hard Wiring the Skew.

161. 2004, July, Chicago, Third World Congress of the Bachelier Finance Society  
Keynote Address: The Variance Gamma Model, Applications and Extensions.
162. 2004, September, Credit Derivatives Conference, Venice  
Invited Address: On the Pricing of Credit Default Swaps.
163. 2005, January 15, Manchester, Fourth Levy Process Conference  
Invited Talk: Portfolio Theory with Multivariate Levy Processes
164. 2005, January 20, University of Paris Dauphine  
Seminar: Non-Gaussian Investment
165. 2005, February 1, Isaac Newton Institute, Cambridge University, Cambridge, UK  
Invited Talk: Issues in Financial Mathematics
166. 2005, February 4, Judge Institute of Management Studies, Cambridge University, Cambridge UK  
Seminar: Non-Gaussian Investment
167. 2005, April 22, Isaac Newton Institute, Cambridge University, Cambridge, UK  
Invited Talk: On Modeling Equity Derivatives.
168. 2005, May 17, Ixis Bank Ritz Paris  
Day Seminar: Financial Innovations and New Structured Products in the Equity World
169. 2005, June 3, Ascona Switzerland  
Seminar: Self Decomposable Laws and Local Levy Models.
170. 2005, June 17-23, Chengdu China, International Conference on Management Science and Applications  
Invited Address: Structured Products in the Equity World.
171. 2005, July 24-28, Calgary, Robert Elliott Conference  
Invited Talk: Structured Products in the Equity World
172. 2005, October 6-8, Austin Texas  
Seminar: Self Decomposable Laws and Local Levy Processes
173. 2005, Charlottesville, Virginia. Eugene Seneta Conference  
Invited Talk: Self Decomposability and Local Levy Processes.
174. 2005, October 27, CTC Manhattan  
Seminar: Asset Allocation with Non Gaussian Returns.
174. 2005, October 28-Nov.1, London, Quant Congress  
Invited Talk: Multi Asset Structured Equity Product Pricing
175. 2005, November 8, New York, Quant Congress  
Invited Talk: Multi Asset Structured Equity Product Pricing
176. 2005, November 28-Dec.3, London  
Day Seminar: Financial Innovations and New Structured Products in the Equity World.
177. 2006, January 15, Birkbeck London  
Seminar: Self Decomposable Laws and Local Levy Processes
178. 2006, January 28, Henri Poincare  
Seminar: Self Decomposable Laws and Local Levy Processes
179. 2006, February 24-28, Ascona  
Invited Talk: Designing Countercyclical and Risk Based Aggregate Deposit Insurance Premia.
180. 2006, May 21-24, London.  
Invited Address: Structured Products in the Equity World  
Brunel University



181. 2006, September 19-23, Credit Derivatives Workshop, Edinburgh  
Paper Presentation, "Pricing Equity Default Swaps under the CGMY Levy Model,"
182. 2006, Risk Day ETH, Zurich, October 20  
Invited Talk: Sato Processes and the Valuation of Structured Products.
183. 2006, November, 7, Princeton University  
Seminar: Sato Processes and the Valuation of Structured Products
184. 2006, November 30 Columbia University  
Seminar: Sato Processes and the Valuation of Structured Products.
  
185. 2007, January, 26, Institut Henri Poincare Paris  
Seminar: Sato Processes and the Valuation of Structured Products.