

# Derivatives Securities and Risk Management Conference

## KEYNOTE SPEAKER:

Thomas A. Russo  
Lehman Brothers  
*Vice Chairman / Chief Legal Officer*

Thomas A. Russo is a Vice Chairman of Lehman Brothers Inc. and the Firm's Chief Legal Officer. He is head of the Firm's Corporate Advisory Division with responsibility for Legal, Compliance, Internal Audit, Government Relations, and the Documentation Group. In addition, he is Chairman of the Firm's New Products Committee and Operating Exposures Committee. Mr. Russo also serves as Counsel to Lehman Brothers' Executive Committee, and is a member of its Operating Committee.

Prior to joining Lehman Brothers in January, 1993, Mr. Russo was a partner at the Wall Street law firm of Cadwalader, Wickersham & Taft and a member of its Management Committee where he specialized in SEC enforcement and broker-dealer operations, CFTC enforcement and regulation, derivative, financial and general corporate law. Mr. Russo also served as Advisor to the Brady Commission in 1987. He was listed in the National Law Journal's survey as one of the "100 Most Influential Lawyers in America", each time it was published.

From 1975 to 1977, Mr. Russo was the Deputy General Counsel of the Commodity Futures Trading Commission, then became the first Director of its Division of Trading and Markets. From 1971-75 he was an associate at Cadwalader, Wickersham & Taft. Mr. Russo also worked as an attorney in the Division of Market Regulation of the SEC (1969-71).

## CONFERENCE LEAD-OFF SPEAKER:

Stephen A. Ross  
Massachusetts Institute of Technology  
*Franco Modigliani Professor of Finance & Economics*

Stephen A. Ross is the author of more than 75 articles in economics and finance, and the coauthor of an introductory textbook in finance. He received his B.S. with honors from CalTech in 1965 where he majored in physics, and his Ph.D. in economics from Harvard in 1970. He is probably best known for having invented the Arbitrage Pricing Theory and the Theory of Agency, and as the co-discoverer of risk neutral pricing and of the binomial model for pricing derivatives. Models developed by him and coworkers, including term structure models and option pricing models, are now standards for pricing in major securities trading firms. He has been the recipient of numerous prizes and awards including the Graham and Dodd Award for financial writing, the Pomerance Prize for excellence in the area of options research, the University of Chicago's Leo Melamed Prize for the best research by a business school professor and the 1996 IAFE Financial Engineer of the Year Award. A Fellow of the Econometric Society and a member of the American Academy of Arts and Sciences, he currently serves as an Associate Editor of several economics and finance journals and in 1988 was President of the American Finance Association.



## Conference Organizers

Peter Carr  
New York University

Joseph A. Cherian  
Banc of America Capital Management

Thomas F. Coleman  
Cornell Theory Center

Robert A. Jarrow  
Cornell University

Stuart Turnbull  
Lehman Brothers, Inc.



**Friday, April 25th, 2003**

7:30am-8:15am	<b>Registration and Continental Breakfast</b>	
8:15am-8:30am	<b>Opening Remarks:</b> Thomas F. Coleman, Cornell University	
8:30am-10:00am	<b>SESSION ONE</b>	<b>SESSION ONE: THEORY</b> <i>Chair: Robert Jarrow</i>
		<b>Compensation, Incentives and the Duality of Risk Aversion and Riskiness</b> Stephen A. Ross, Massachusetts Institute of Technology
		<b>A Chaotic Approach to Interest Rate Modelling</b> Lane P. Hughston, King's College London <i>Co-author:</i> Avraam Rafailidis, King's College London
		<b>Employee Reload Options: Pricing, Hedging and Optimal Exercise</b> Philip H. Dybvig, Washington University <i>Co-author:</i> Mark Loewenstein, Boston University
10:00am-10:30am	<b>Coffee Break</b>	
10:30am-NOON	<b>SESSION TWO</b>	<b>SESSION TWO: INTEREST RATE AND CREDIT RISK</b> <i>Chair: Joseph A. Cherian</i>
		<b>Understanding the Role of Recovery in Default Risk Models: Empirical Comparisons and Implied Recovery Rates</b> Frank Zhang, Federal Reserve Board <i>Co-authors:</i> Gurdip Bakshi, Dilip Madan, University of Maryland
		<b>Black's Model of Interest Rates as Options, Eigenfunction Expansions and Japanese Interest Rates</b> Vadim Linetsky, Northwestern University <i>Co-author:</i> Viatcheslav Gorovoi, Northwestern University
		<b>An Econometric Model of Credit Spreads with Re-balance, ARCH, and Jump Effects</b> Jing-zhi Huang, Penn State University <i>Co-authors:</i> Herman Bierens, Weipeng Kong, Penn State University
NOON-1:30pm	<b>Lunch</b>	
1:30pm-3:00pm	<b>SESSION THREE</b>	<b>SESSION THREE: COMPUTATION</b> <i>Chair: Thomas Coleman</i>
		<b>Robust Numerical Methods for Pricing Options with Jump Diffusion</b> Yann d'Halluin, University of Waterloo <i>Co-authors:</i> Peter Forsyth, K.R. Vetzal, University of Waterloo
		<b>Pricing and Calibration of Convertible Bonds</b> Leif Anderson, Banc of America Securities, LLC
		<b>Total Risk-Minimization Using Monte Carlo Simulation (and Spline Approximations)</b> Cristina Patron, Cornell University <i>Co-authors:</i> Thomas F. Coleman, Yuying Li, Cornell University
3:00pm-3:30pm	<b>Coffee Break</b>	
3:30pm-5:00pm	<b>SESSION FOUR</b>	<b>SESSION FOUR: OPTIONS</b> <i>Chair: Dilip Madan</i>
		<b>Risk-Neutral Kurtosis, Jumps and Option Pricing: Evidence from 100 Most Actively Traded Firms on the CBOE</b> Charles Cao, Pennsylvania State University <i>Co-author:</i> Gurdip Bakshi, University of Maryland
		<b>Hedging Errors under Misspecified Asset Price Processes</b> Iliana Anagnou, University of Warwick <i>Co-author:</i> Stewart D. Hodges, University of Warwick
		<b>On The Market Price of Volatility Risk</b> Ehud I. Ronn, University of Texas <i>Co-author:</i> James S. Doran, University of Texas
5:00pm-6:00pm	<b>Cocktail Reception</b>	
6:00pm-7:30pm	<b>Dinner</b> <b>Keynote Speaker:</b> Thomas A. Russo, Lehman Brothers Vice Chairman/Chief Legal Officer <i>with an introduction by Stuart Turnbull, Lehman Brothers</i>	

**Saturday, April 26th, 2003**

7:30am-8:30am		<b>Continental Breakfast</b>
8:30am-10:00am	<b>SESSION FIVE</b>	<b>SESSION FIVE: VOLATILITY AND CORRELATION</b> <i>Chair: Peter Carr</i>
		<b>Replicating Power Claims with Options</b> Mark A. Cassano, University of Calgary
		<b>Robust Replication of Volatility Derivatives</b> Roger Lee, Stanford University <i>Co-author: Peter Carr, New York University</i>
		<b>Asymmetric Global Equity and Bond Correlations</b> Robert Engle, New York University <i>Co-authors: Lorenzo Cappiello, European Central Bank, Kevin Sheppard, University of California San Diego</i>
10:00am-10:30am		<b>Coffee Break</b>
10:30am-NOON	<b>SESSION SIX</b>	<b>SESSION SIX: COMPUTATION II</b> <i>Chair: Peter Forsyth</i>
		<b>A Weighted Stochastic Mesh Method for Pricing American-Style Derivatives via Monte Carlo Simulation</b> Xiaoping Xiong, University of Maryland <i>Co-author: Michael Fu, University of Maryland</i>
		<b>Option Pricing Under a Double Exponential Jump Diffusion Model</b> S. G. Kou, Columbia University <i>Co-author: Hui Wang, Brown University</i>
		<b>Efficient Computation of Hedging Parameters for Discretely Exercisable Options</b> Stathis Tompaidis, University of Texas <i>Co-authors: Ron Kaniel, Alexander Zemlianov, University of Texas</i>
NOON-12:15pm		<b>Closing Remarks: Stuart Turnbull, Lehman Brothers</b>

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## Organizing Committee:



**Dr. Peter Carr** is a visiting professor at the Courant Institute of New York University. Prior to his current position, he headed equity derivative research groups for six years at Banc of America Securities and at Morgan Stanley. His prior academic positions include 4 years as an adjunct professor at Columbia University and 8 years as a finance professor at Cornell University. Since receiving his PhD. in Finance from UCLA in 1989, he has published extensively in both academic and industry-oriented journals. He is currently the treasurer of the Bachelier Finance Society and a practitioner director for the Financial Management Association. He is also an associate editor for 6 academic journals related to mathematical finance and derivatives. He has given numerous talks at both practitioner and academic conferences and was recently selected as *Risk Magazine's* prestigious "Quant of the Year" for 2003.



**Dr. Thomas F. Coleman** is the Director of the Cornell Theory Center and CTC-Manhattan, a computational finance consulting center in New York City. Also a Cornell Professor of Computer Science and Applied Mathematics, Dr. Coleman's research centers on the design and understanding of practical and efficient numerical algorithms for continuous optimization. His primary interest is in the development of computational methods and tools for large-scale optimization problems with emphasis on applications of computational finance. Specifically, recent work of Dr. Coleman and his colleagues includes a new methodology for computing implied volatility surfaces from option prices, new hedging techniques, a parallel index tracking implementation, new portfolio optimization methods, and the use of parallel computing techniques in computational finance.



**Dr. Joseph A. Cherian** is the Managing Director of Quantitative Research at Banc of America Capital Management, responsible for managing quantitative research used by Bank of America's primary money-management affiliate. This includes overseeing all proprietary active equity model development and deployment and managing various asset allocation mutual funds. He also manages quantitative asset allocation research used on behalf of the bank's institutional and individual clients. Prior to joining Bank of America in 2000, Joe taught and conducted research in quantitative finance, fixed income and derivatives at the graduate business schools of Cornell University, Boston University and the University of Amsterdam. Joe serves on the advisory boards for the Research Foundation of the Association for Investment Management and Research (AIMR) and SKG Inc. He has been published in various journals. Joe earned his Ph.D. and master's degree in finance from Cornell University and a bachelor's degree in electrical engineering from the Massachusetts Institute of Technology.



**Dr. Robert A. Jarrow** is the Ronald P. and Susan E. Lynch Professor of Investment Management at the Johnson Graduate School of Management of Cornell University. Professor Jarrow's teaching and research interests involve the study of mathematical finance: derivatives, risk management, investments and asset pricing theory. He is currently engaged in research relating to the pricing of credit derivatives, liquidity risk, and exotic options. A Graduate Faculty representative in four fields: management, economics, operations research and industrial engineering, and applied mathematics, he is also the managing editor of *Mathematical Finance*, a coeditor of *The Journal of Derivatives*, among numerous other finance journals. He was a Mobil scholar in 1993 and a member of the Merrill Lynch Academic Advisory Council in 1994-95. In 1997 he was named IAFE Financial Engineer of the Year in recognition of his many contributions to the field. He is currently an IAFE senior fellow.



**Dr. Stuart Turnbull** is Senior Vice President, head of quantitative credit research at Lehman Brothers, New York. Prior to joining Lehman Brothers, he was in risk management at the Canadian Imperial Bank of Commerce. In academia, Stuart was the Bank of Montreal Professor of Banking and Finance, Queen's University (Canada), and a Research Fellow, Institute for Policy Analysis (Toronto). A graduate of the Imperial College of Science and Technology (London) and the University of British Columbia, he is the author of *Option Valuation*, and (with Robert A. Jarrow) *Derivative Securities*. He has published over 40 articles in major finance and economic journals, and law and economics journals, as well as many articles in practitioner journals. He is, with Robert Jarrow, author of the J-T model of pricing credit derivatives, which is widely used by financial institutions. He is an associate editor of *Mathematical Finance*, the *Journal of Derivatives*, the *International Journal of Theoretical and Applied Finance*, and has served as an associate editor for the *Journal of Finance*.

The conference organizers would like to thank Thomas Russo, 13th Annual Derivatives Securities Conference Keynote Speaker, as well as our colleagues Dilip Madan (University of Maryland) and Peter Forsyth (University of Waterloo) for their support and participation as session chairs.

Technical papers are available on the enclosed CD.

For information on future activities at CTC Manhattan, please visit our web page: <http://www.ctc-manhattan.com/>