

Wilmott Awards 2006



The winners of this year's awards as voted by users of wilmott.com



Contribution to Quantitative Finance (Cutting Edge Research)

WINNER Bruno Dupire

Bruno Dupire has headed the Derivatives Research teams at Société Générale, Paribas Capital Markets and Nikko Financial Products before joining Bloomberg to develop pricing, risk management and arbitrage models. He is best known for having pioneered the widely used Local Volatility model (simplest extension of the Black-Scholes-Merton model to fit all option prices) in 1993 and subsequent stochastic volatility extensions. His recent work includes pricing and hedging of volatility derivatives and optimal delta hedging strategies. Before these years, he obtained a Master's Degree in Artificial Intelligence, a PhD in Numerical Analysis and introduced the use of Neural Networks for financial time series forecasting. He is a Fellow and Adjunct Professor at NYU. Bruno is in the Hall of Fame of Risk Magazine, as one of the 50 most influential people in the history of Derivatives.



Bruno Dupire

REACTION

"This award reached me during my vacation in St Barth, and it has indeed been a very nice surprise, topping a gorgeous day filled with sun and beauty. I just finished reading a novel by André Gide and I was meditating on his sentence '*Rien ne décourage plus la pensée que cette persistance de l'azur.*'"

"These last two years at Bloomberg in NY have been intense, stimulated by an excellent research environment and the opportunity to present in numerous places my recent results on volatility derivatives, optimal hedging strategies, technical analysis, skew modeling and volatility arbitrage, amongst other.

"I want to thank the people who judged my work worthy the award and wish to congratulate *Wilmott* for having established in a short span of time a respected publication and a hugely popular forum. Finally, I want to thank my wife and my two kids for their constant love and support."

NOMINEES

Vladimir Piterbarg

Head of Fixed Income Quantitative Research Barclays Capital. Prior to this he led the quantitative interest rate modelling group at Bank of America which governed the banks approach to rates based products globally. He gained his PhD in Mathematics (Stochastic Calculus) at the University of Southern California.

Wim Schoutens

Wim Schoutens has a degree in Computer Science and a PhD in Science, Mathematics. He is a research professor in the Department of Mathematics at

the Catholic University of Leuven, Belgium. He has been a consultant to the banking industry. Wim is author of the Wiley book "*Lévy Processes in Finance: Pricing Financial Derivatives*" and editor (together with A E Kyprianou and P Wilmott) of the Wiley-book "*Exotic Option Pricing and Advanced Lévy Models*". His research interests cover all areas of financial Mathematics, in particular Lévy models. He recently has published on advanced equity models, model risks, hedging of variance swaps, jump driven credit models and multivariate financial modeling. He currently teaches several courses related to financial engineering in different Masters programs and is an engaging lecturer for the financial industry.



Contribution to Quantitative Finance (Implementation)

WINNER Emanuel Derman

Along with Fischer Black, Emanuel Derman is one of the people responsible for molding Goldman Sachs' reputation of the late eighties and early nineties. Derman paid equal attention to financial modeling and its implementation in the trading world. The Black, Derman Toy (BDT) yield curve model and Derman-Kani local volatility model are now ubiquitous, as is the move from hard science to the markets – and it was Derman who helped beat that path. Derman joined Goldman in 1985 in its financial strategies group. After developing BDT, Derman moved to spearheading the GS-One object-oriented modeling library. He took a break from Goldman for a year working at the adjustable rate mortgage research group at Salomon Brothers at the end of the decade



Emanuel Derman

before returning to Goldman Sachs in 1990 as head of its equities division's quantitative strategies group. Derman devoted the next ten years to developing models of volatility behavior, exotic options pricing and variance swaps, as well as building trading software for Goldman's equity derivatives division. Derman moved to firmwide risk in early 2000 as head of its derivatives analysis group, where he ran Goldman's quantitative risk strategies group in 2001. His hallmark has always been an ability to bring the best aspects of an academic approach to heel in the real world, as described in his recent book *My Life as a Quant: Reflections on Physics and Finance*.

REACTION

"I was very gratified to be the recipient of the Wilmott Award. I learned from experience to regard quantitative finance as a multi-disciplinary field, a mix of financial theory, mathematics and computer science, overlaid with a skeptical attitude and an ability to talk to and learn from the people who use this stuff to survive.

"The mix of disciplines that makes the field so stimulating was easier to achieve when I started out in this business and everything was less specialized. I still like mixtures – combining pie-in-the-sky theory with the indignities of reality, working alone and then interacting with people. I suppose mixtures are part of the reason I like derivatives too. So, I'm particularly pleased to be the recipient in the Quantitative Finance (implementation) category. I thank *Wilmott* and its readers for this honor.

NOMINEES

Bruno Dupire
Peter Jaeckel

Dr. Peter Jaeckel is the Global Head of Credit, Hybrid, Commodity and Inflation Derivatives, ABN AMRO. He received his DPhil from Oxford University in 1995. Jaeckel has worked with Commerzbank Securities in London in the front office product development and derivatives modeling group. Prior to that he worked within the NatWest Group/Royal Bank of Scotland Quantitative Research Centre. He started his career in finance with Nikko Securities' London operation in 1997. His book *Monte Carlo Methods in Finance* has become an invaluable resource for quantitative analysts who need to run models that assist in option pricing and risk management. This concise, practical hands-on guide to Monte Carlo simulation introduces standard and advanced methods to the increasing complexity of derivatives portfolios. Ranging from pricing more complex derivatives, such as American and Asian options, to measuring Value at Risk, or modeling complex market dynamics, Jaeckel has shown that simulation is the only method gener-

al enough to capture the complexity and Monte Carlo simulation is the best pricing and risk management method available.



Technological Development

WINNER ITO 33

ITO33

REACTION

Elie Ayache, founder, ITO 33
"Some people call our products difficult and esoteric. Indeed modern derivative pricing is a very hard problem that is crying out for a radical revision of the technology, even for a philosophical critique to try to establish what we expect from the technology in the first place. "It is hard to replace Black-Scholes not only because this historic model is so widely used but because the hardest part is to first understand how Black-Scholes can be so simple. "The primary task should be to untangle the strands that make up Black-Scholes: implied volatility and dynamic hedging, and see how they can be preserved and generalized in a world that is obviously not Black-Scholes. That my company has won this year's Wilmott Award for Technological Development is proof that our philosophy and its application to derivative technology is now meeting with public recognition. "Our advanced numerical schemes replace the speed and robustness of the analytical Black-Scholes formula. Our solution for calibration and recalibration replaces implied volatility, and our algorithm for dynamic optimal hedging in incomplete mar-

kets replaces the Black-Scholes delta. "However the best is yet to come as we will soon unveil the ultimate tool that encapsulates all these radical advances"

NOMINEES

Xenomorph
UnRisk

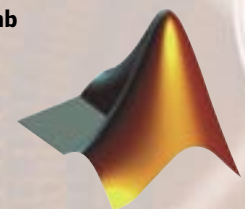


Software

WINNER Matlab

NOMINEES

FinCAD
Mathematica
SciFinance
Insightful



Educator

WINNER Nassim Nicholas Taleb

NNT is the Dean's Professor in the Sciences of Uncertainty at the University of Massachusetts at Amherst. He is also an essayist, beltrist, literary-philosophical-mathematical *flâneur*, and practitioner of uncertainty ("mathematical trader") focusing on the attributes of unexpected events, with a focus on extreme deviations, the "Black Swans" (i.e. outliers), their unpredictability, and our general inability to forecast.

NNT is only interested in one single topic, chance (particularly extreme & rare events); but it falls at the intersection of philosophy/epistemology (skepticism; knowledge about the dynamics of history; inferential claims), philosophy/ethics (stoicism facing random events; theories of nonhedonic happiness), mathematics (probability, statisti-

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cal physics), social science/finance (opacity & incomplete information; why economists have no clue but think that they know a lot), and cognitive science (how we are “fooled” by randomness). He mainly derives his intuitions from a 2-decade long and intense practice of derivatives trading (“nondull” activities with plenty of randomness). The ideas are expressed in literary form in the trilogy: *Fooled by Randomness* (2001, 2004, 17 languages, confusion of luck and skills), *The Black Swan* (2006, epistemology/philosophy of history, history explained by large deviations), and *Chance and the Logic of Happiness* (c. 2007, ethics/ stoicism, nonhedonic happiness).

REACTION

“This is an honor for me particularly that I give a small number of lectures. I lecture just as I write, from my guts not my brain, with no regards for formalism and with contempt for anything remotely academic. I never thought that it would ever be recognized. Thank you for putting up with me and giving me this award.”



Nassim Nicholas Taleb

NOMINEES

Mike Staunton

Mike has been demystifying the arcane of spreadsheet modelling for both academics and practitioners for two decades – and over that time has become rather good at it! He is the author (with Mary Jackson) of the blockbuster *Advanced Modelling in Finance using Excel and VBA* “the book with no exercises and lots of practical code that works”. His regular column in *Wilmott* magazine continues this service to the community with concision and applicability that are Mike’s hallmarks. Mike is based at the London Business School where he is a director of the London Share Price Database. Mike is visiting lecturer in Numerical Methods at Cass Business School in London, where he teaches on the Masters in Mathematical Trading and Finance

Bill Ziemba

Bill is the Alumni Professor of Financial Modeling and Stochastic Optimization, Emeritus in the Sauder School of Business, University of British Columbia where he taught from 1968 to 2004. He now teaches as a visiting professor. His experience is regularly imparted to the readers of *Wilmott* through his regular column which provides insight into aspects of scenario management both historical and current and an always engaging insight into his research in asset-liability management, portfolio theory and practice, security market imperfections, Japanese and Asian financial markets, sports and lottery investments and applied stochastic programming Bill is series editor for North Holland’s Handbooks in Finance series and is author or editor of a continuing stream of influential books in various areas of invest-

ments and financial markets, and is a frequent speaker at conferences and seminars around the world.



New Book of the Year (General Finance)

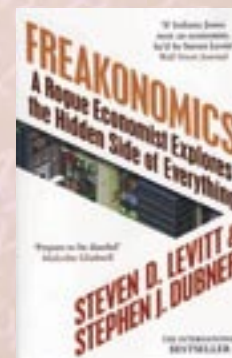
WINNER *Freakonomics*

Steven D Levitt, Stephen J Dubner Allen Lane – Penguin (2005)

Which is more dangerous, a gun or a swimming pool? What do schoolteachers and sumo wrestlers have in common? Why do drug dealers still live with their moms? How much do parents really matter? What kind of impact did *Roe v. Wade* have on violent crime?

Through forceful storytelling and wry insight, Levitt and co-author Stephen J. Dubner show that economics is, at root, the study of incentives - how people get what they want, or need, especially when other people want or need the same thing. In *Freakonomics*, they set out to explore the hidden side of É well, everything. The inner workings of a crack gang. The truth about real-estate agents. The myths of campaign finance. The telltale marks of a cheating schoolteacher. The secrets of the Ku Klux Klan.

Freakonomics establishes this unconventional premise: if morality represents how we would like the world to work, then economics represents how it actually does work. It is true that readers of this book will be armed with enough riddles and stories to last a thousand cocktail parties. But *Freakonomics* can provide more than that. It will literally redefine the way we view the modern world.



NOMINEES

Fortune’s Formula: The Untold Story of the Scientific Betting System That Beat the Casinos and Wall Street

William Poundstone

Farrar, Strass & Giroux – Hill & Wang (2005)

In 1956 two Bell Labs scientists discovered the scientific formula for getting rich. One was mathematician Claude Shannon, neurotic father of our digital age, whose genius is ranked with Einstein’s. The other was John L. Kelly, Jr., a Texas-born, gun-toting physicist. Together they applied the science of information theory – the basis of computers and the Internet – to the problem of making as much money as possible, as fast as possible.

Shannon and MIT mathematician Edward O Thorp took the “Kelly formula” to the roulette and blackjack tables of Las Vegas. It worked. They realized that there was even more money to be made in the stock market, specifically in the risky trading known as arbitrage. Thorp used the Kelly system with his phenomenally successful hedge fund Princeton-Newport Partners. Shannon became a successful investor, too, topping even Warren Buffett’s rate of return and using his wealth to drop out of the scientific world. *Fortune’s Formula* traces how the Kelly formula sparked controversy even as it made fortunes at racetracks, casinos, and trading desks. It reveals the dark side of this alluring scheme, which is founded on exploiting an insider’s edge. The cast of character spans J. Edgar Hoover, Rudolph Giuliani, Michael Milken and Warren Buffett; Hollywood producers, Wall Street crooks, snarky Nobel Laureates,

and the Jewish mob. *Fortune's Formula* explores a new and surprising side to the Shannon legacy. Based in part on Shannon's previously unseen personal records as well as interviews with both of Shannon's wives, Thorp, and many others, it is the first full-length treatment of a subject that is changing ideas about finance. Claude Shannon believed it was possible for a smart investor to beat the market – and *Fortune's Formula* will convince you he was right.

Busting Vegas: The MIT Whiz Kid Who Brought the Casinos to Their Knees

Ben Mezrich

William Morrow – HarperCollins (2005)

Semyon Dukach was known as the Darling of Las Vegas. A legend at age twenty-one, this cocky hotshot was the biggest high roller to appear in Sin City in decades, a mathematical genius with a system the casinos had never seen before and couldn't stop – a system that has never been revealed until now; that has nothing to do with card counting, wasn't illegal, and was more powerful than anything that had been tried before.

Las Vegas. Atlantic City. Aruba. Barcelona. London. And the jewel of the gambling crown – Monte Carlo.

Dukach and his fellow MIT students hit them all and made millions. They came in hard, with stacks of cash; big, seemingly insane bets; women hanging on their arms; and fake identities. Although they were taking classes and studying for exams during the week, over the weekends they stormed the blackjack tables only to be harassed, banned from casinos, threatened at gunpoint, and beaten in Vegas's notorious back rooms.

In the classroom, they were

geeks. On the casino floor, they were unstoppable.

Busting Vegas is Dukach's unbelievably true story; a riveting account of monumental greed, excess, hubris, sex, love, violence, fear, and statistics that is high-stakes entertainment at its best.

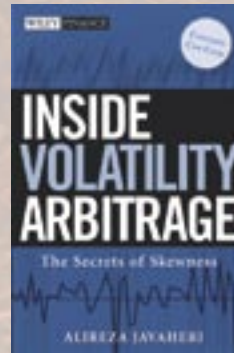
Fischer Black and the Revolutionary Idea of Finance
Perry Mehrling
Wiley (2005)

Fischer Black and the Revolutionary Idea of Finance explores Fischer Black's intellectual journey from Harvard to the offices of ADL, from the University of Chicago to MIT, and then to Goldman Sachs. Years of research and interviews with Black's business and academic associates, as well as family and friends, are distilled into a scholarly yet personal story of the formation and development of the extraordinary mind and unique character of this unassuming renegade. This poignant book tells the story of one man's intellectual adventure at the very center of modern finance. It is a story about the birth of quantitative finance and financial engineering. It is also the story about the continuing human quest to defeat the "dark forces of time and ignorance," as John Maynard Keynes famously put it.



New Book of the Year (Quantitative Finance)

WINNER Inside Volatility Arbitrage: The Secrets of Skewness
Alireza Javaheri
Wiley (2005)



Today's traders want to know when volatility is a sign that the sky is falling (and they should stay out of the market), and when it is a sign of a possible trading opportunity. *Inside Volatility Arbitrage* can help them do this. Author and financial expert Alireza Javaheri uses the classic

approach to evaluating volatility – time series and financial econometrics – in a way that he believes is superior to methods presently used by market participants. He also suggests that there may be "skewness" trading opportunities that can be used to trade the markets more profitably. Filled with in-depth insight and expert advice, *Inside Volatility Arbitrage* will help traders discover when "skewness" may present valuable trading opportunities as well as why it can be so profitable.

NOMINEES

Finance and Derivatives: Theory & Practice
Sebastien Bossu and Philippe Henrotte
Wiley (2005)

Finance & Derivatives: Theory & Practice Bossu & Henrotte is a translation of the successful French language book *Exercices de Finance des Marchés*, published by Dunod. It contains a selection of exercises, along with the relevant financial theory, that can be used by advanced undergraduate and postgraduate students. As well as being ideal for adoption on university courses, it will also be highly valuable as a self-study guide for practitioners.

Asset Price Dynamics, Volatility, and Prediction

Stephen J. Taylor
Princeton University Press (2005)

Stephen Taylor provides a comprehensive introduction to the dynamic behavior of asset prices, relying on finance theory and statistical evidence. The key topics covered include random walk tests, trading rules, ARCH models, stochastic volatility models, high-frequency datasets, and the information that option prices imply about volatility and distributions.

Asset Price Dynamics, Volatility, and Prediction is ideal for students of economics, finance, and mathematics who are studying financial econometrics, and will enable researchers to identify and apply appropriate models and methods. It will likewise be a valuable resource for quantitative analysts, fund managers, risk managers, and investors who seek realistic expectations about future asset prices and the risks to which they are exposed.

Quantitative Finance for Physicists
Anatoly B Schmidt
Elsevier (2005)

With more and more physicists and physics students exploring the possibility of utilizing their advanced math skills for a career in the finance industry, this much-needed book quickly introduces them to fundamental and advanced finance principles and methods. Find out how fractals, scaling, chaos, and other physics concepts are useful in analyzing financial time series. Learn about key topics in quantitative finance such as option pricing, portfolio management, and risk measurement. This book provides the basic knowledge in finance required to enable readers with physics backgrounds to move successfully into the financial industry.