



# The Human Dimension of Risk

## Perception, Behaviour and Decision-Making in Risk Management

8th and 9th December, 2010  
University of Cambridge - Judge Business School

Centre for  
**Risk Studies**



UNIVERSITY OF  
CAMBRIDGE  
Judge Business School



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# Cambridge Centre for Risk Studies 2nd Annual Meeting

## The Human Dimension of Risk: Perception, Behaviour and Decision-Making in Risk Management

**8 -9 December 2010**

Cambridge Judge Business School

### Meeting Overview:

The human dimension of risk is an important and under-explored aspect of risk management issues. In the second annual meeting of the Centre for Risk Studies, last year's themes of societal resilience and the failure of complex systems will be further developed through a deeper examination of human society as a complex system. Human dimensions of risk transcend many boundaries, emanating from risk perception, understanding patterns of behaviour and into the processes of decision-making and policy development.

### Meeting Speakers Include:

- **Dr Kanwardeep Ahluwalia**, Managing Director, Risk Management, Swiss Re Group
- **Richard Bronk**, Visiting Fellow, European Institute, London School of Economics
- **Professor Ed Bullmore**, Cambridge Department of Psychiatry & Director, Behavioural & Clinical Neuroscience Institute
- **Dr John Coates**, Senior Research Fellow, Cambridge Judge Business School
- **Dr Andrew Coburn**, Senior Vice President, RMS
- **Dr D'Maris Coffman**, Director, Winton Centre for Financial History
- **Dr Anna Dempster**, Senior Lecturer, Sotheby's Institute of Art & Birkbeck College
- **Professor Gerard Evan**, Head of University of Cambridge Department of Biochemistry
- **Andrew Freeman**, Executive Director, Deloitte Center for Financial Services
- **Mark Gilbert**, London Bureau Chief, Bloomberg News
- **Dr David Good**, King's College Cambridge
- **Dr Jonathan Grant**, President, RAND Europe
- **Robert Hayes**, Senior Fellow, Microsoft Institute for Advanced Technology in Governments
- **Dr William Janeway**, Senior Advisor, Warburg Pincus
- **Dr Paul Kaplan**, Quantitative Research Director, Morningstar Europe, Ltd
- **Professor Frank Kelly**, Statistical Laboratory, Cambridge & Master, Christ's College
- **Professor Charlie Kennel**, UCSD Sustainability Solutions Centre
- **Dr Leslie Knapp**, Reader, Cambridge Department of Anthropology
- **Cindy Levy**, Director, UK Financial Services and Risk Management Practices, McKinsey & Company
- **Harlan Loeb**, Executive Vice President and US Director of Issues & Crisis, Edelman
- **Dr Peter Nakada**, Managing Director, RMS
- **Dr William Nuttall**, Senior Lecturer, Cambridge Judge Business School
- **Professor Tso-Chien Pan**, Dean, College of Engineering & Director, Institute of Catastrophe Risk Management, Nanyang Technological University, Singapore
- **Professor Haresh Shah**, Chairman of Advisory Board, Institute of Catastrophe Risk Management, Nanyang Technological University, Singapore & Emeritus Professor of Stanford University
- **Dr Simon Singh**, TV Director, Author, and Science Journalist
- **Alan Smith**, Global Head of Risk Strategy, HSBC
- **Dr Peter Stern**, Senior Editor, SCIENCE

### Organising Committee Chair:

**Michelle Tuveson**  
Cambridge Centre for Risk Studies

### Organising Committee:

**Philippa Bradshaw**, Cambridge Centre for Risk Studies  
**Andrew Coburn**, RMS  
**Anna Dempster**, Sotheby's Institute of Art & Birkbeck College  
**Andrew Freeman**, Deloitte Center for Financial Services  
**Danny Ralph**, Cambridge Centre for Risk Studies  
**Ruth Whaley**, Regulatory Fundamentals Consulting, LLC

# The Human Dimension of Risk: Perception, Behaviour and Decision-Making in Risk Management

**Wednesday 8 December 2010**

**08:30 - 09:00**      **Coffee & Meeting Registration**

**09:00 - 09:15**      **Welcome and Introduction**

Professor Geoff Meeks, Acting Director of Cambridge Judge Business School

**09:15 - 13:00**      **Plenary Session 1: Perception**

**Chaired by: Michelle Tuveson, Executive Director, Cambridge Centre for Risk Studies**

09:15 - 10:00      The Brain and Its Business Model

Professor Ed Bullmore, Cambridge Department of Psychiatry & Director, Behavioural & Clinical Neuroscience Institute

10:00 - 10:30      Uncertainty and Doubt in Conversation and How They Are Managed

Dr David Good, King's College Cambridge

10:30 - 11:00      Visualisation of Sentiment Indicators Used in Market Trading

Mark Gilbert, London Bureau Chief, Bloomberg News

**11:00 - 11:30**      **Coffee & Tea**

11:30 - 12:00      Systemic Risk Poll and Discussion

Dr Ben Hardy, Research Associate, Neuroscience, Endocrinology & Finance

12:00 - 12:50      Panel Discussion: Cultures in Crisis: Challenges of Managing Perception and Governance

Moderated by Andrew Freeman, Executive Director, Deloitte Center for Financial Services

- Dr Kanwardeep Ahluwalia, Managing Director, Risk Management, Swiss Re Group
- Robert Hayes, Senior Fellow, Microsoft Institute for Advanced Technology in Governments
- Harlan Loeb, Executive Vice President and US Director of Issues & Crisis, Edelman
- Professor Tso-Chien Pan, Dean, College of Engineering & Director, Institute of Catastrophe Risk Management, Nanyang Technological University, Singapore

12:50 - 13:00      Plenary Session 1 Summary: Perception and Beyond

Dr Paul Kaplan, Quantitative Research Director, Morningstar Europe, Ltd.

**13:00 - 14:00**      **Lunch**

**14:00 - 16:30**      **Plenary Session 2: Behaviour**

**Chaired by: Professor Daniel Ralph, Director, Cambridge Centre for Risk Studies**

14:00 - 14:45      Insights from the Asian Micro-Insurance Markets: How the Last Mile Can Be Connected

Professor Haresh Shah, Chairman of Advisory Board, Institute of Catastrophe Risk Management, Nanyang Technological University, Singapore & Emeritus Professor of Stanford University

14:45 - 15:15      Learning from Primates: Group Behaviour and Cooperation

Dr Leslie Knapp, Reader, Cambridge Department of Anthropology

15:15 - 15:45      Bubbles, Manias and Market Failures: From Tulips to Subprime

Dr D'Maris Coffman, Director, Winton Centre for Financial History

**15:45 - 16:15**      **Coffee & Tea**

16:15 - 16:45      Taking Control of Organisational Risk Culture

Cindy Levy, Director, UK Financial Services and Risk Management Practices, McKinsey & Company

**16:45 - 17:30**      **Open Forum Discussion and Summary**

**Chaired by: Professor Frank Kelly, Statistical Laboratory, Cambridge & Master, Christ's College**

**17:30 - 19:00**      **Drinks Reception: Cambridge Judge Business School Common Room**

**19:15 - 22:00**      **Meeting Dinner**

University of Cambridge – Peterhouse Dining Hall

Trumpington Street, Cambridge CB2 1RD

**Peterhouse Dinner Welcome**

**Professor Peter Landshoff, Christ's College Fellow, University of Cambridge DAMTP**

**Keynote Speaker**

**Resilient Societies: A Brit's Perspective on the Irrepressible Optimism and Dynamism of California**

Professor Gerard Evan, Head of University of Cambridge Department of Biochemistry



## Thursday 9 December 2010

**08:30 - 09:00**      **Coffee & Meeting Registration**

**09:00 - 09:15**      **Welcome and Introduction**

Dr Andrew Coburn, Senior Vice President, RMS

**09:15 - 13:00**      **Plenary Session 3: Decision-Making**

**Chaired by: Dr Jonathan Grant, President, RAND Europe**

09:15 - 10:00      Knightian Uncertainty and Innovation: A Philosophical Look at the Recent Financial Crisis  
Richard Bronk, Visiting Fellow, European Institute, London School of Economics

10:00 - 10:30      Culture and Link to Operational Performance  
Andrew Freeman, Executive Director, Deloitte Center for Financial Services

10:30 - 11:00      Managing Risk Strategy in Banking - Balancing the Human with the Financial  
Alan Smith, Global Head of Risk Strategy, HSBC

**11:00 - 11:30**      **Coffee & Tea**

11:30 - 12:00      Hedging Uncertainty as a Venture Capitalist  
Dr William Janeway, Senior Advisor, Warburg Pincus

12:00 - 13:00      Panel Discussion #2: Decision Making: Before and After a Crisis  
Moderated by Dr Jonathan Grant, President, RAND Europe

- Dr John Coates, Senior Research Fellow, Cambridge Judge Business School
- Professor Charlie Kennel, UCSD Sustainability Solutions Centre
- Dr Peter Nakada, Managing Director, RMS
- Dr Peter Stern, Senior Editor, SCIENCE

**13:00 - 14:00**      **Lunch**

**14:00 - 15:15**      **Plenary Session 4: Policy Setting and Adoption**

**Chaired by: Dr Andrew Coburn, Senior Vice President, RMS**

14:00 - 14:45      Libel Laws and the Influences on Free Communication  
Dr Simon Singh, TV Director, Author, and Science Journalist

14:45 - 15:15      Views into the Creative Industries  
Dr Anna Dempster, Senior Lecturer, Sotheby's Institute of Art & Birkbeck College

15:15 - 15:45      Nuclear Renaissance - The Proliferation Challenge  
Dr William Nuttall, Senior Lecturer, Cambridge Judge Business School

**15:45 - 16:15**      **Open Forum Discussion and Contemplation: Capturing Collective Thoughts**

**Chaired by: Dr Andrew Coburn, Senior Vice President, RMS**

**16:15-16:30**      **Meeting Summary**

Dr Jonathan Grant, President, RAND Europe

# The Human Dimension of Risk: Perception, Behaviour and Decision-Making in Risk Management

## Risk from a Human Perspective

The human element of risk poses some of the most complex challenges of understanding risk and developing respective strategies. This conference addresses the theme of human interaction with risk by bringing together a wide range of disciplines, expertise, and knowledge areas. It is a forum for sharing experience between academics, professional scientists, business practitioners, and government policy-makers.

This second annual conference of the Cambridge Centre for Risk Studies further develops the theme of last year's conference: Managing the Risk of Catastrophic Failure of Complex Systems. This previous theme explored improving resilience to societal and economic risk through many different examples of the risk of failure of infrastructure, communications networks, biological systems, complex engineering and financial markets. Feedback from last year's conference was very positive and encouraged us to tackle the issue of human society as a complex system.

## The Plenary Sessions: Perception, Behaviour, and Decision Making

Ultimately the management of risk requires a good grasp of how people recognize and assess the risk with which they are faced. Classical paradigms assume that markets are efficient and that individuals are rational actors. Standard economic theory indicates that people act rationally when involved in economic activities, and many instances of decision making is modelled as an optimisation of expected utilities based on values and probabilities.

However, there exists a significant growing body of research highlighting the belief that people have non-economic motives and that they are not always rational when making decisions. Human behaviour within decision making frameworks is particularly uncharted when people are addressing risk during an unfolding crisis with asymmetry of information and time discounting factors.

The theme of risk perception in the conference is addressed through presentations on what we know about the brain, communication and sentiment in expressing our attitudes to risk. The panel session on perception discusses how to use these insights in corporate risk governance.

Human behaviour is both a contributor to the threats we face and a key factor in our management of risk. Many crises can be exacerbated or ameliorated by collective actions. In this theme, presentations explore our understanding of risk-oriented behaviour, historical examples of crises driven by behaviour, the empowerment of communities to reduce their risk, and how to encourage risk management behaviour in organisations.

Risk management decision making extends from government policy development, to corporate operational risk control, and through to individual decisions about self protection and risk reduction. This theme explores decision-making, ranging from the recent financial crisis, banking strategy and investment optimization, to operational risk management in different types of business practices and industries, and the extreme societal issues of nuclear proliferation. The panel session explores these themes of making hard decisions in situations of deep uncertainty.

## Conference Structure

This conference is structured to address three primary themes of human interaction with risk, with sessions on perception, behaviour and decision-making. The two day meeting comprises of many short presentations to expand our exposure to different ideas and relevant work which might be outside of our own disciplines. This complements the Centre's objectives for fostering dialogue and interdisciplinary discussions between attendees, both formally through the panel sessions and informally through conversation and networking opportunities throughout the day.

## Outputs of the Conference

This programme has been assembled to encourage debate and provoke thought across conventional boundaries. As with last year's conference, the various speaker contributions will be made available through online presentations at the website of the Centre for Risk Studies. It is planned to publish material arising from themes from the conference, and details on this will be made available on the website.

We look forward to a lively and stimulating conference and hope that it contributes to the mandate of the Centre for Risk studies of promoting resilience through the management of Societal and Economic Risk.

*Professor Danny Ralph, Academic Director*  
*Michelle Tuveson, Executive Director*  
*Dr. Andrew Coburn, Director of Executive Advisory Board*

### Panel Discussion 1: Cultures in Crisis: Challenges of Managing Perception and Governance

In today's world, crises arise from many directions. How can organisations effectively assess and manage their short term and long term risks? Crises can range from external environmental disasters to operational breakdowns, malfeasance, reputational threats, liability issues, litigation and other risks. Strong cultures allow open debate, and openness to look at broad level of scenarios. This session will look at issues of risk perception and behavioural uses in building a resilient organisation.

### Panel Discussion 2: Decision Making: Before and After a Crisis

This panel discussion explores risk decision making before, during and after a crisis. This panel considers the environment of decision-making to mitigate future risks. Extreme crises or rare catastrophes may be perceived differently and thus a response to crisis qualitatively different. How can we develop decision strategies that embrace this qualitative difference, and what research agenda do we need to support this?

# Risk Research Overview

The Centre for Risk Studies' proposed research projects explore the issues of understanding and modelling catastrophes, within its mission for promoting societal and economic resilience. The Centre's research interests broadly cover the following areas:

- Corporate Risk Governance
- Economic and Financial Risk
- Environmental Risk and Climate Change
- Catastrophe Risk Management for Natural and Man-Made Perils
- Health-Related Societal Risk
- Developing Risk Management Policy

The Centre's initial research programmes explore systemic risks around markets, energy investments, risk governance and human dimension & perceptions. The research programme is structured with a number of key industry sponsors and includes concept exploration, proof of concept and detailed methodological development.

## Ongoing Risk Research Projects at the Centre

### Systemic Market Risks

This research programme focusses on understanding the causes and drivers of financial catastrophe risk, and methods of assessing the frequency and severity of the 'tail risk' of sudden depreciations in asset value. Research includes understanding financial models of crises, defining causal events and assessing impact scenarios and quantifying future likelihoods.

Outputs of the research are intended to inform policy development to reduce the likelihood of future economic catastrophes, improved business management of market 'tail risk' and early warning system to detect an impending financial crisis.

### Human Dimension & Perception Risks

This programme addresses the human dimension in relation to risk studies, including perceptions, behaviour, and decision making.

Amongst many aspects, this includes the perception of valuations, the influence into the creative industries, affects of certainty and confidence, and behavioural models in traditional decision theory.

Impacts of externalities such as societal crises and mass media can have significant influence and these human perceptions can manifest in various behavioural dimensions spanning from impacts to general economic markets and policy adoption. This research expands upon decision theory concepts and explores human sentiment within the context of behavioural decision making.

### Energy Investment Risks

The capital intensive nature of energy production, together with long timescales for returns and non-storeability of electricity, highlights the difficulties faced in deregulated electricity markets.

Given the time scales, there are limited opportunities for financial hedging of risk. For example, the economic viability of a plant may be more sensitive to regulatory issues (e.g., allocation of permits in the carbon Emissions Trading Scheme) than to uncertainty in either fuel prices or efficiency of new technologies.

The goal of this research is to embed risk into planning, i.e., to step beyond traditional risk neutral valuations, and to capture the longer term by understanding market structure, from generation and transmission to emissions trading schemes.

### Corporate Risk Governance

This research programme covers emerging topics in corporate governance structures for adopting risk management boards and looks at correlations to performance, influence of board of directors, executive pay, shareholder intervention and takeovers.

A top down view is concerned with industry structure and hence regulation at the industry level, addressing the broad question of delivering effective structures and processes. The role and influence of directors, boards and committees is one aspect of risk research. Agency issues relating to executive pay and alignment of executives incentives with those of shareholders, takeovers, shareholder intervention are explored. The lens of risk highlights some aspects of how risk management is operationalised in firms, including processes, metrics, compliance and reporting.

A cross-cutting topic like risk appetite demonstrates the linkages between board level and operations. While calibrating and prescribing risk appetite is a matter for the board, the measurement of risk is often embedded in layered and decentralised operational practices that themselves affect risk profile and thus risk appetite. Organisation structures such as lines of communication, control and responsibility are also considered.

# Spotlight on Cambridge Centre for Risk Studies 2010: A Year in Review

## Understanding Risk Seminar Series



### **Risk Management and Decision Making: A Corporate Chief Risk Officer's Perspective**

**Dr Ruth Whaley** - Senior Consultant at The Regulatory Fundamentals Group (RFG)



### **Plan for the Worst, Hope for the Best: Managing the Deep Downside Risk in Government and Business**

**Professor Dougal Goodman** - Chief Executive, The Foundation for Science and Technology



### **Modelling the Risks of Climate Change**

**Dr Chris Hope** - Reader in Policy Modelling, Cambridge Judge Business School



### **The Role of Risk and Uncertainty in the Creative Industries**

**Dr Anna Dempster** - Senior Lecturer, Sotheby's Institute of Art - Birkbeck College



### **Financial Risk Governance and Management in the European Union**

**Professor Kern Alexander** - Professorial Chair in Banking, Corporate Governance and Financial Market Law, University of Zürich



### **The Modern History of US Corporate Governance**

**Professor Brian Cheffins** - S J Berwin Professor of Corporate Law, University of Cambridge Faculty of Law



### **Executive Education: Risk Management for Corporate Resilience**

The Cambridge Centre for Risk Studies conducted Executive Education modules to senior executives in telecommunications, banking, and manufacturing from Indonesia. This module was part of the Cambridge Judge Business School's Executive Education Programme. The focus of the sessions were on operational continuity for major companies spanning a variety of industries. Operational Risk Frameworks were used to model potential disruption scenarios.



Singapore - Cambridge Risk Research Programme

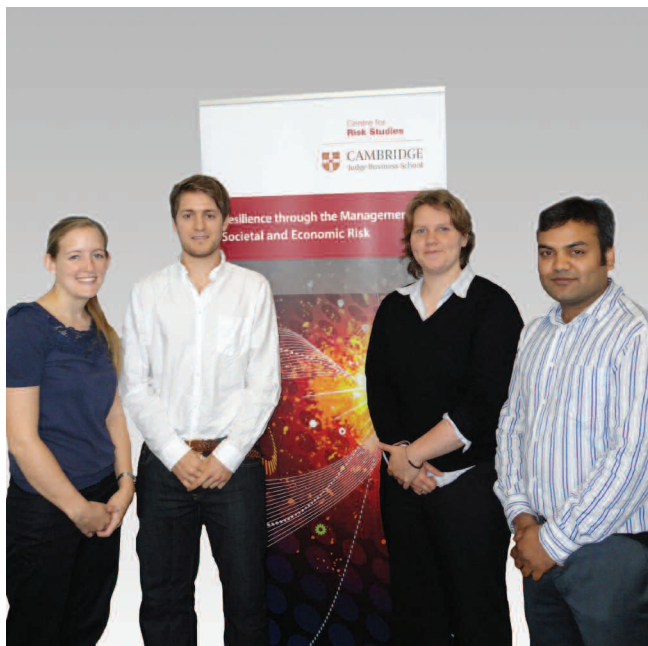
### **Nanyang Technological University, Singapore – Cambridge Centre for Risk Studies Research Collaboration**

The Cambridge Centre for Risk Studies and Nanyang Technological University, Singapore have created a partnership to explore the issues of understanding and modelling risks, within its mission for promoting societal and economic resilience.

This partnership will further the research goals of each organization through collaborative programmes striving to address the challenges within a global spectrum. Proposed research topics explore systemic risks around markets, energy investments, natural catastrophes, and human dimension & perceptions.

- Resident Fellow Programme
- Collaborative Risk Research
- International Risk Forum





## Student Spotlight Seminar

### Promising Research by University of Cambridge Students

- Lithium: Risks Associated with New Energy Supply Chain and Implications to Energy Security, Pip Walters – Dept. Of Engineering
- Facial Skin Colour and Health Perception in Humans, Simeon Innocent – Dept. of Anthropology
- Risk Management Practices in Global Manufacturing Investment, Mukesh Kumar – Institute for Manufacturing
- Complexity in Health Organisations and the Co-existence of Different Organising Principles, Catherine Edwards – Cambridge Judge Business School

## Risk Centre's Conference Out-brief Event

Cambridge Risk Centre presents and moderates a roundtable discussion on the topics around new energy finance amongst Cambridge Judge Business School's Energy Special Interest Group.

Discussion topics included the future of the clean energy sector, carbon markets, and regulations. Debates on the role of capital markets versus policy as well as the influence of globalization on energy investment decisions were held.



## Risk Writer's Event

**Mastering Operational Risk**, by Tony Blunden and John Thirlwell, published by Financial Times Prentice Hall, presented by John Thirlwell



## Cambridge Risk Centre's Industry Forum

Presented by Morningstar Europe Ltd. and AnalyCorp Inc

The Centre's Industry Forum is an opportunity for academia to learn about industry-based research. This year's forum included an exchange of research expanding modern portfolio theory to include investments in R&D portfolios, assets with fat-tailed distributions, and options.



## Cambridge Risk Event

Cambridge Centre for Risk Studies in Association with the Royal Statistical Society & Knowledge Transfer Network hosted a meeting on Complexity and Statistics: Tipping Points & Crashes. This event brought together researchers and practitioners to present ideas on changepoint detection and prediction in complex systems. A broad array of disciplines were addressed from financial crashes, climate tipping points, and earthquakes.

# Meeting Speaker Biographies



**Dr Kanwardeep Ahluwalia** is Head of Financial Risk Management for Swiss Re Group. In this capacity he is a regular participant in the Investment Committee and Finance & Risk Committee of the Board. Kanwardeep started his career in the Risk Assessment Group of the Securities & Futures Authority in 1994. He joined the US investment bank Bear Stearns in 1996 and rose to the position of Chief Risk Officer (Europe & Asia) and Global Head of Market Risk before moving to Swiss Re. Kanwardeep holds an MA degree in physics from the University of Oxford and a PhD in theoretical physics from the University of Cambridge.



**Richard Bronk** is a writer and Visiting Fellow at the European Institute, London School of Economics with expertise in the history of ideas, philosophy of economics, comparative corporate governance and European political economy. He spent 17 years in the City of London – positions including head of European equities at Baring Asset Management, European equity strategist at Merrill Lynch, and Adviser on European capital markets and political economy at the Bank of England. Richard is author of *Progress and the Invisible Hand - the Philosophy and Economics of Human Advance*; and *The Romantic Economist - Imagination in Economics*. He has an MA in Classics and Philosophy from Merton College, Oxford.



**Professor Ed Bullmore** studied medicine at the University of Oxford, & St Bartholomew's Hospital in London. He trained in psychiatry at the Maudsley Hospital, London. As a Wellcome Trust Research Training Fellow, he was awarded a PhD in statistical analysis of MRI data at the Institute of Psychiatry, London. In 1999, he was appointed Professor of Psychiatry in the University of Cambridge. Since 2005 he has been Clinical Director of the Behavioural & Clinical Neuroscience Institute, and Vice-President, Experimental Medicine, for GlaxoSmithKline. He has more than 260 research publications, mainly on aspects of neuroimaging, and is a Fellow of the Academy of Medical Sciences



**Dr John Coates** is a Senior Research Fellow in Neuroscience and Finance at the Judge Business School and works closely with the Department of Physiology, Development and Neuroscience on a research project focused on the endocrine system and financial risk taking. Previously, John traded derivatives for Goldman Sachs, Merrill Lynch, and ran a trading desk for Deutsche Bank specialising in short dated options, swaptions, and exotic derivatives. He developed techniques for valuing and arbitraging the tails of probability distributions, and for trading low probability events such as financial crises. He received his MPhil and PhD from the University of Cambridge.



**Dr. Andrew Coburn** is a member of the senior management team of Risk Management Solutions, Inc. (RMS), the world's leading provider of catastrophe risk analytics for the insurance and financial services industry. Dr. Coburn is one of the leading contributors to the creation of the class of catastrophe models that over the past 20 years has come to be an accepted part both of business management in financial services public policy making for societal risk. Dr. Coburn has extensive experience in developing models and using them for business decision support. Dr. Coburn is the Director of the External Advisory Board of the Cambridge Centre for Risk Studies. He earned a PhD from Christ's College, Cambridge.



**D'Maris Coffman** is the Director of the Winton Centre for Financial History & the Mary Bateson Research Fellow at Newnham College, Cambridge. Most of her current research is on the relationship between public finance and private capital markets in early modern and early late modern Europe. She manages the European State Finance Database. She received her MA and PhD in History from the University of Pennsylvania and her BSc in Economics from the Wharton School. She has offered courses to advanced undergraduates and graduate students at Penn and Cambridge in early modern public finance, economic thought, and the development of financial capitalism.



**Dr. Anna Dempster** is a Senior Lecturer at the Sotheby's Institute of Art and the Dept of Management, Birkbeck College, University of London. In 2006 Anna was appointed Research Director of the Creative Industries Observatory at the London College of Communication, University of the Arts. She was the creative industries advisor for NESTA, DCMS, the Design Council and the Work Foundation. Anna has an MA and M.Phil in History from Cambridge and a PhD in Strategy from the Judge Business School. She was a research fellow at the London Business School - Centre for the Network Economy and visiting professor at Rotterdam School of Management, Erasmus University.



**Professor Gerard Evan**, FRS, Christ's College Cambridge, is the Sir William Dunn Chair of Biochemistry in the University of Cambridge. Since 1999, he was the Gerson and Barbara Bass Bakar Distinguished Professor of Cancer Biology at the University of California, San Francisco. He was awarded the Pfizer prize in Biology in 1995 and in 1996 was elected as the Royal Society's Napier Professor of Cancer Research. In 1999 he was elected a Fellow of the UK Academy of Medical Sciences. Gerard received his BA in Biochemistry from the St. Peter's College, Oxford and his PhD in Molecular Immunology from King's College, Cambridge.



**Andrew Freeman** is the Executive Director of the Center for Financial Services at Deloitte Services LLP and is responsible for the development of the Center's research platforms and key activities. Andrew's focus is on building relationships with strategic clients and leading the development of Deloitte's intellectual capital on financial services industry issues. Before joining Deloitte, Andrew was a Senior Knowledge Expert in Risk at McKinsey & Company. Prior to that, Andrew was an award-winning financial journalist for more than two decades at The Economist and the Financial Times. He has authored several books and journal articles on Risk Management. He is a graduate of Balliol College, Oxford.



**Mark Gilbert** is London Bureau Chief and a columnist on global capital markets for Bloomberg News, and has been with the company since 1991. Mark was born in Liverpool and graduated from Kings College, Cambridge in 1989 with a BA Hons in Philosophy. He was nominated as a finalist in the Commentary category of the U.K. 2006 Business Journalist of the Year awards, and holds a Malcolm Forbes Award for Best Business Story from the Overseas Press Club of America. Mark is the author of 'Complicit: How Greed and Collusion Made the Credit Crisis Unstoppable.'



**Dr. David Good**, Department of Social & Developmental Psychology, & King's College, University of Cambridge. Currently, he is working on how people interact with and through various new technologies, and the development of specific practical and professional skills. In late 2000, he established the Crucible Network with Dr Alan Blackwell dedicated to interdisciplinary work in technology design with the specific goal of bringing together expertise from the Humanities and Social Sciences with that in Technology. Support for his current work includes funding from the Boeing, EPSRC, Department of Health, Technology Strategy Board, and the Royal Academy of Engineering.



**Dr. Jonathan Grant** is President of RAND Europe. He received his PhD from the Faculty of Medicine, University of London and has published extensively on health R&D policy, the use of research and evidence in policy making and population policy issues. He contributes to the implementation of the UK Department of Health's internationally acclaimed R&D strategy, "Best Research for Best Health". Jonathan led the UK's National Audit Office's examination into the use of research in policy making, "Getting the Evidence", and was principal investigator of an influential study sponsored by the European Commission looking at Europe's low fertility. He was formerly Head of Policy at the Wellcome Trust.



**Robert Hayes** is a Senior Fellow of the Microsoft Institute for Advanced Technology in Governments; a small group established to give high level support and advice to governments on the threats and opportunities posed by emerging technologies. He has over thirty years experience working for the UK Government in senior positions in the law enforcement, security and intelligence community; he has also been a Senior Civil Servant in two UK Government Departments. Prior to joining Microsoft he was Head of the UK National Technical Assistance Centre (NTAC). Robert holds a B.Sc. in Psychology and is a Fellow of the British Computer Society.



**Dr. William H. Janeway** is Senior Advisor at Warburg Pincus. He received his PhD in economics from Cambridge University where he was a Marshall Scholar. He was valedictorian of the class of 1965 at Princeton University. Bill is a Director at Nuance Communications, O'Reilly Media, and Wall Street Systems and on the Board of Managers of Roubini Global Economics. He is Chairman of the Board of Trustees of Cambridge in America, University of Cambridge, Co-Chair of Cambridge's 800th Anniversary Capital Campaign, and a Founder Member of the Board of Managers of the Cambridge Endowment for Research in Finance (CERF). He is a member of the Board of Governors of the Institute for New Economic Thinking (INET).



**Dr. Paul D. Kaplan**, is Director of Quantitative Research for Morningstar Europe, Ltd. He has served as chief investment officer of Morningstar Associates, LLC. Before joining Morningstar in 1999, he was a VP of Ibbotson Associates and served as the firm's chief economist and director of research. Prior to that, he served on the economics faculty of Northwestern University where he taught international finance and statistics. Kaplan holds degrees from New York University and Northwestern University. He received the 2008 Graham and Dodd Award, the highest honour given by the Financial Analysts Journal, and was a Graham and Dodd Award of Excellence winner in 2000.



**Professor Frank Kelly**, FRS, is Professor of the Mathematics of Systems at the University of Cambridge, and Master of Christ's College, Cambridge. His main research interests are in random processes, networks and optimization. He is especially interested in applications to the design and control of networks and to the understanding of self-regulation in large-scale systems. Frank has received several prizes for his work, including the Naylor Prize of the London Mathematical Society and the John von Neumann Theory Prize. From 2003 to 2006 he served as Chief Scientific Adviser to the United Kingdom's Department for Transport.



# Meeting Speaker Biographies



**Professor Charles Kennel** is a Distinguished Professor, Emeritus, of Atmospheric Sciences at Scripps Institution of Oceanography, Senior Strategist for the UCSD Sustainability Solutions Institute, and co-leads the University of Cambridge/UCSD Global Water Initiative. Charlie's past positions include Associate Administrator of NASA and Director of Mission to Planet Earth, Director and Dean of the Scripps Institution of Oceanography, Vice Chancellor of UCSD's Marine Sciences, and UCLA's Physics Dept Chair and Executive Vice Chancellor. He presently chairs the California Council on Science & Technology and the Space Studies Board of the US National Academy of Sciences. Charlie was educated in astronomy and astrophysics at Harvard and Princeton.



**Dr Leslie Knapp** is a Reader in Primate Genetics and Behaviour in the Department of Biological Anthropology at the University Cambridge. She leads the Primate Immunogenetics and Molecular Ecology (PrIME) Research Group, focussing her research on the study of genes and genetic diversity in humans and nonhuman primates. She works with international collaborators in Asia, Africa and South America. She is a Fellow and College Lecturer in Biological Natural Sciences and Tutor at Emmanuel College, Cambridge. Before moving to Cambridge, she conducted postdoctoral research at the University of Wisconsin, Madison and received her PhD from the University of California, Los Angeles.



**Professor Peter Landshoff** was head of the University of Cambridge's School of the Physical Sciences when he retired in 2004 from his Professorship of Mathematical Physics. His research had been on the physics of quarks. He played a leading role in the creation of a number of new projects in the University. Peter has been working to improve transport information systems and has become involved with a number of organisations that are trying to have a positive influence on the way the East of England is developing: the regional civic societies, the regional RSA, and Cambridge Past, Present & Future. Most recently, he has been helping to run workshops on the future of airport security.



**Cindy Levy** is a Director based in McKinsey's London office. She leads the UK Financial Services and Risk Management Practices. Cindy works primarily for global banks and asset managers on the strategy, organization and risk management agendas. She leads McKinsey's knowledge on risk topics such as risk culture, operational risk and risk organisation. Previously, Cindy worked for Goldman Sachs & Co in New York in Corporate Finance. During this period she analysed and executed a number of transactions including equity offerings, debt offerings and mergers. Cindy received an AB in Economics from Harvard University and an MBA from Stanford Graduate School of Business.



**Harlan Loeb** is Executive Vice President and US Director of Issues, Crisis & Risk Management at Edelman. Harlan is an internationally recognized expert in reputational risk management. In partnership with leading academics from schools including the Kellogg School of Management at Northwestern University, he routinely works with boards and senior executives to build reputational risk into enterprise risk models. He is a graduate of Vassar College and earned his law degree with honours from the University of Minnesota. Harlan is also Professor of Crisis and the Court of Public Opinion at Northwestern Law School.



**Professor Geoff Meeks** is Acting Director of Cambridge Judge Business School and Professor of Financial Accounting. Geoff's research interests include Financial reporting around major events in business finance (especially takeover, bankruptcy, IPO); creative accounting and accounting regulation; and corporate governance. Previously, Geoff has been employed by Price Waterhouse, the University of Edinburgh and the Faculty of Economics at Cambridge. He has held visiting positions at Harvard Business School, INSEAD and London School of Economics. He is a member of the Academic Panel of the Accounting Standards Board.



**Peter Nakada** is Managing Director of RMS Capital Markets Solutions. Peter's background has focused on how to bring risk quantification, technology, and management science together to help financial institutions make better risk-return decisions. Previously, Peter was a co-founder of ERisk, a firm that provided risk and capital management software and consulting to the banking industry. Before that, he was a partner in Oliver, Wyman & Company's risk management practice. Peter has a BA in Engineering Sciences from Harvard College, an MS in Engineering Management from Stanford University, and is a Chartered Financial Analyst charterholder.



**Dr William J. Nuttall** is a Senior Lecturer in Technology Policy at Cambridge Judge Business School. He has a leading role in the ESRC Electricity Policy Research Group and is a member of the new Cambridge Nuclear Energy Centre. He is the author of Nuclear Renaissance published in 2005. Prior to coming to Cambridge, he worked at the Institute of Physics on a wide range of physics-based policy issues after two post doctoral research positions using large physics facilities. He was founding Course Director for the Cambridge-MIT Institute sponsored Master's degree in Technology Policy. Bill earned a PhD in Physics from the Massachusetts Institute of Technology as a Fulbright Awardee. He is a Fellow of Hughes Hall Cambridge.





**Professor Tso-Chien Pan** is Dean of the College of Engineering & Director of Institute of Catastrophe Risk Management, Nanyang Technological University, Singapore. Professor Pan specializes in the analysis and design of structures against dynamic loading. Over the years, he has carried out many research projects in the area of dynamic structural response to shock and blast loading, as well as earthquake excitations. As Founding Director, Professor Pan is spearheading the development of ICRM, a university-wide research institute, to look into the effects of natural and man-made disasters on society.



**Professor Danny Ralph** is a Founder and Academic Director of the Cambridge Centre for Risk Studies, and a Fellow of Churchill College. Danny received his PhD in 1990 from the University of Wisconsin Madison. He was a faculty member of the Mathematics & Statistics Department at The University of Melbourne before coming to Cambridge University for a joint appointment in the Engineering Department and Judge Business School. His research interests include optimization methods, equilibrium models for electricity markets, and risk in business decision making. He is Editor-in-Chief of Mathematical Programming (Series B).



**Professor Haresh Shah** is the Chairman of the Institute of Catastrophe Risk Management, Nanyang Technological University, Singapore & Emeritus Obayashi Professor of Engineering at Stanford University. Haresh is currently the Chairman of the World Seismic Safety Initiative. He was a founder and Senior Advisor to RMS. He has served Stanford University in many capacities, including Chairman of the Department of Civil Engineering and Founding Director of the John A. Blume Earthquake Engineering Center. Haresh was awarded "The Top Earthquake Engineer of the 20th Century" given by the ATC and the Engineering News Record of USA.



**Dr Simon Singh** is a TV director, author and science journalist. Having completed his PhD in particle Physics at the University of Cambridge, Simon joined the BBC's science department in 1990. He was a producer and director on programmes such as Tomorrow's World & Horizon. His documentary about the world's most notorious mathematical problem was nominated for an Emmy and won a BAFTA. In 1997 he wrote Fermat's Last Theorem, which was the first maths book to become a No. 1 bestseller in Britain and which has been translated into over 25 languages. He is also the author of The Code Book, Big Bang, and Trick or Treatment.



**Alan Smith** is Global Head of Risk Strategy within HSBC's Global Risk function. He is responsible for the Risk Appetite, ICAAP, Economic Capital, Scenario Stress Testing, and Risk Methodology infrastructures for the Group. He is a member of the Global Risk Management Board, the Capital Demand and Basel 2 Oversight Committees and chairs the Group Economic Capital and Scenario Stress Testing Committees. Prior to HSBC, Alan worked with KPMG London, latterly within its Financial Sector Advisory practice. Alan is a Fellow of the Institute of Chartered Accountants of England and Wales and has an MBA in Finance from Cass Business School, City University London.



**Dr Peter Stern** serves as senior editor for Science, the prestigious weekly journal of the American Association for the Advancement of Science. Previously, he was a research scientist at the Dept of Neurophysiology, Max-Planck-Institute for Brain Research, in Frankfurt am Main, Germany, and a postdoctoral research fellow in the Pharmacology Dept of University College London. Peter received his PhD in medicine from the University of Heidelberg, and is an expert in the fields of cellular and molecular neuroscience, electrophysiology, neuropharmacology, higher brain functions, brain scanning and fMRI, and studies on consciousness and perception. Other areas of interest include psychology, intelligence research, philosophy, history, and economy.



**Michelle Tuveson** is a Founder and Acting Executive Director of the Cambridge Centre for Risk Studies. She is currently on sabbatical from Lockheed Martin as she completes her PhD research in decision theory and risk perception at the University of Cambridge – Dept of Engineering. Previously, she held positions with management strategy firm, Booz Allen & Hamilton and U.S. R&D organization, MITRE Corporation. She has been awarded by the Career Communications Group, Inc. as a Technology Star for Women in Science, Technology, Engineering and Maths (STEM). She has degrees from the Massachusetts Institute of Technology & Johns Hopkins University and is a member of Christ's College Cambridge.



**Dr Ruth Whaley** is Director of Corporate Development for the Cambridge Centre for Risk Studies. Ruth is based in New York and is Senior Consultant at the Regulatory Fundamentals Group (RFG), which provides advisory services on the impact and implementation of regulatory change for financial service companies. For the past 10 years she was the Chief Risk Officer of MBIA, member of the Executive Committee and managed credit, market and operational risk across the firm. Earlier positions included corporate banking at UBS and Citibank in leveraged finance and energy. Ruth is an alumnus of Cambridge and Harvard Universities, and a Barbara Bodichon Fellow at Girton College.



## Cambridge Centre for Risk Studies

The Centre for Risk Studies is a multidisciplinary centre of excellence for the study of societal and economic risks. The Centre focuses on impact-oriented research relating to the analysis, assessment, and mitigation of global risks. Emphasis on relevancy to industry and government is an overarching perspective of the Centre's activities and engagements.

### Cambridge Connection:

Cambridge Judge Business School is uniquely positioned to draw together disparate research programmes from across the University of Cambridge, and serve as the platform for dialogue and development with external organisations and policy-makers. The Centre drives the intellectual momentum and pools key elements from these research groups to create a coherent research unit focused on developing strategies for risk management.

Industry supporters play an important role in shaping the direction of research. Our research programmes examine specific issues in risk management. Each programme takes full advantage of the expertise and commitment of existing University faculty and research groups.

### Centre's Objectives:

- Integrate Cambridge University's academic offerings for public and private sector risk research
- Provide a base for coordinating and sponsoring multi-disciplinary research projects
- Establish frameworks for modelling risks and decision making
- Contribute to publications for dissemination to government, academia, and industry
- Pursue private and public sector funding

### The Core Team at the Centre

The Centre is a hub for a growing network of faculty, fellows, associates and students at the University of Cambridge.



**Professor Daniel Ralph**  
Academic Director



**Ms Michelle Tuveson**  
Executive Director



**Dr Andrew Coburn**  
Director of External Advisory Board



**Dr Ruth Whaley**  
Director of Corporate Development

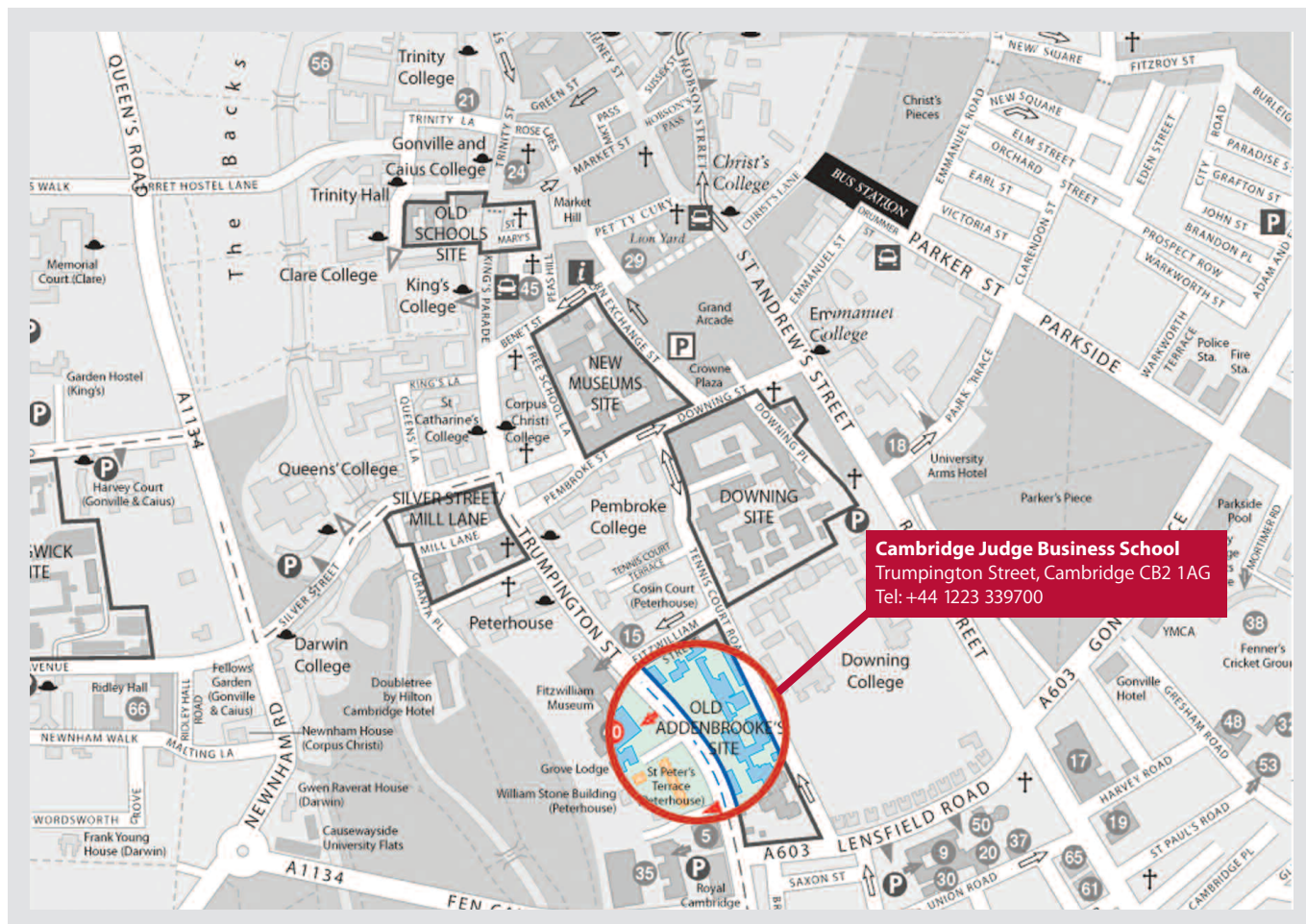


**Professor Peter Landshoff**  
Director of Community Engagement



**Ms Philippa Bradshaw**  
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Save the Date:

**Cambridge Centre for Risk Studies 3rd Annual Meeting**  
**Anticipating the Future: Risk Management for Long-term Planning**  
**7 and 8 December 2011**

# Resilience through the Management of Societal & Economic Risk

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