

# Managing Financial Risks with Uncertainty

Tuesday 25 July 2006, 7:00 am for 7:30 am - 9:30 am

Level 47, MLC Centre, 19 Martin Place, Sydney.

The three pillars of financial risk are market, operational and credit risks. All three involve uncertainty when the probabilities of future returns, extreme events and defaults are unknown.

Value at risk (VaR) used to evaluate market risk is usually based on end-of-horizon portfolio value. Alternative measures of market risk such as minimum portfolio value take account of what can happen at intermediate times and do not involve uncertain measures of confidence intervals.

Imprecise probabilities and other techniques used to model environmental risks can be adapted and applied to the management of operational risk.

Modelling credit risk with Information-Gap Decision Theory enables financial institutions to simultaneously satisfy regulatory requirements and profit aspirations with loan books and interest rate ratio among credit risk categories that have optimal immunity to uncertainty.



**Colin Thompson**

## *Info-Gap Decision Theory*

Professor Colin Thompson will talk on financial applications of Info-Gap Decision Theory, a new non-statistical methodology for dealing with true or Knightian uncertainty where the probabilities of future events are unknown. He will show that institutions using Info-Gap Theory can simultaneously satisfy their profit aspirations and regulatory requirements by assigning loan-book values and interest rate ratios among credit risk categories that have optimal immunity to uncertainty.



**Mark Burgman**

## *Operational Risk Assessment*

Professor Mark Burgman will talk on the theory and practice of operational risk assessment. His experience in forestry, fisheries management, irrigation, national parks management and his skills in qualitative and quantitative analysis give him a unique perspective on the frailties and strengths of alternative approaches to risk assessment. He will explore the psychology of risk perception, methods for eliciting model parameters and assumptions, and ways of characterising uncertainties and carrying them through chains of logic and calculations, to generate reliable bounds on judgements.



**Yakov Ben-Haim**

## *Intuitive Info-Gap Theory and Values at Risk*

Professor Yakov Ben-Haim will present an intuitive exposition of Info-Gap Decision theory, which is a non-probabilistic methodology for planning and decision under severe uncertainty. He will touch on applications to financial risk assessment, especially the incorporation of info-gap theory in value at risk assessments.



**Ron Bewley**

## *Is there an Info-Gap between Academics and Practitioners?*

Professor Ron Bewley will discuss Info Gap-Decision theory drawing upon the similarities and contrasts of his academic and business careers. In his current role as head of Quantitative Research at Commsec, he builds risk models for financial markets, financial planners and funds managers.

## MASCOS

The theory of complex systems plays an integral role in providing society with a variety of amenities such as the internet, air traffic control, irrigation, robotics, power distribution, telecommunications, defence, manufacturing and finance. It also provides models for ecological and biological systems of all types.

The ARC Centre of Excellence for Mathematics and Statistics of Complex Systems (MASCOS) aims to stimulate research activity in the mathematical and statistical modelling of complex systems, and to encourage the cross-fertilisation and application of ideas and techniques from different areas of mathematics to the analysis of complex systems.

In addition to its research program, MASCOS organises and funds conferences, seminars and courses for students, researchers and industry. It also maintains a vigorous industry outreach program, collaborating with a diverse range of organisations such as medical research institutes, government departments, financial institutions and manufacturing companies.

The MASCOS Head Office is situated at The University of Melbourne with nodes at:  
La Trobe University – Melbourne;  
The Australian National University – Canberra;  
The University of New South Wales – Sydney; and  
The University of Queensland – Brisbane.

## AMSI

For further information see [www.amsi.org.au](http://www.amsi.org.au)

## TARGET AUDIENCE

- Senior Managers concerned with improving their financial risk management.
- Managers directly responsible for their companies' risk management.

## WHERE & WHEN

Tuesday 25 July 2006  
Registration from 7:00 am for 7:30 am - 9:30 am  
with networking afterwards.  
NSW Trade and Investment Centre  
Department of State and Regional Development  
Level 47 - MLC Centre,  
19 Martin Place, Sydney

Breakfast will be provided at no cost to participants.

## REGISTRATION

To register please send your name, organisation, position, title and full contact details either by e-mail to [mayda@maths.unsw.edu.au](mailto:mayda@maths.unsw.edu.au) or by fax to 02 9385 7123.

Registration is free. Bookings are essential.

## CONTACT DETAILS

ARC Centre of Excellence for Mathematics and Statistics of Complex Systems (UNSW – Sydney).

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e-mail: [mayda@maths.unsw.edu.au](mailto:mayda@maths.unsw.edu.au)  
web: [www.complex.org.au](http://www.complex.org.au)

## Colin Thompson

Professor Thompson has a wealth of experience and expertise in applying mathematics to complex systems in industry, the biological and physical sciences, management and finance. His consultancies include CSR, WMC, BHP, Telstra, Victorian Plantations Corporation, Merrill Lynch and AMP. He has held academic positions at the University of California, MIT, Princeton and Northwestern University and a chair in mathematics at the University of Melbourne.

## Mark Burgman

Professor Burgman is Director of the Australian Centre of Excellence for Risk Analysis. He is known for his work on ecological modelling, conservation biology and risk assessment. His work has included models on a variety of species and ecological systems in a range of settings including marine fisheries, forestry, vertebrate management in national parks, and the impacts of electrical power utilities and mining. He worked as a consultant ecologist and research scientist in Australia, the United States and Switzerland during the 1980's before joining the University of Melbourne in 1990. In Australia, he acts on scientific advisory panels for the Victorian EPA, the Zoological Board, the Australian Antarctic Division and Federal Biodiversity Advisory Committee.

## Yakov Ben-Haim

Prof. Yakov Ben-Haim is known for his development of Info-Gap Decision Theory for modelling and managing severe uncertainty. Info-Gap Theory is applied in engineering, biological conservation, economics, project management, homeland security, medicine, and other areas. He has been a visiting scholar in Australia, Canada, England, France, Germany, Japan, Korea, Norway, and the US. He has lectured at universities, medical and technological research institutions as well as central banks in Norway and the US. He has published four books and more than 60 articles. He holds the Yitzhak Moda'i Chair in Technology and Economics at the Technion - Israel Institute of Technology.

## Ron Bewley

Ron's research focus covers advising institutional clients on analysing equity and bonds markets, developing models for in-house trading and wealth management solutions for retail clients. He is a Fellow of the Academy of Social Sciences. Prior to joining CommSec he was Professor of Econometrics at UNSW and is now an adjunct professor there. He has also held visiting positions at a number of universities including California, Florida, Pennsylvania, and Vienna.

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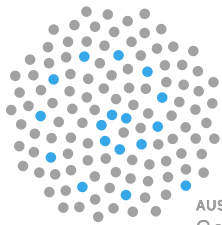


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Centre of Excellence for Mathematics  
and Statistics of Complex Systems



AMSI  
AUSTRALIAN MATHEMATICAL  
SCIENCES INSTITUTE

# REGISTRATION FORM

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with networking afterwards. Level 47, MLC Centre, 19 Martin Place, Sydney.

Fax: 02 9385 7123

Mail: MASCOS  
School of Mathematics  
University of New South Wales  
Sydney, NSW, 2052  
Australia

Mr / Ms / Dr / Other \_\_\_\_\_ Position: \_\_\_\_\_

First name: \_\_\_\_\_

Family name: \_\_\_\_\_

Affiliation: \_\_\_\_\_

Daytime phone number: \_\_\_\_\_

Email: \_\_\_\_\_

Relevant areas of interest: \_\_\_\_\_