



UNIVERSITY OF
LIVERPOOL

Institute for Financial and Actuarial Mathematics – IFAM
Department of Mathematical Sciences

Actuarial & Financial Mathematics 2012: Theory & Practice

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Dr Athanasios (Thanasi) Pantelous
Director of IFAM




Institute for Financial and Actuarial Mathematics (IFAM)

Our university (which belongs to the Russell Group) is committing substantial funding to the establishment of an **Institute for Financial and Actuarial Mathematics (IFAM)** within the Department of Mathematical Sciences.

The Institute focuses on research in these areas and will constitute a **key** source of mathematical expertise for the newly-founded multi-disciplinary **Institute for Risk and Uncertainty (Live@Risk)**.

It strives to forge links with the business community in the North-West.

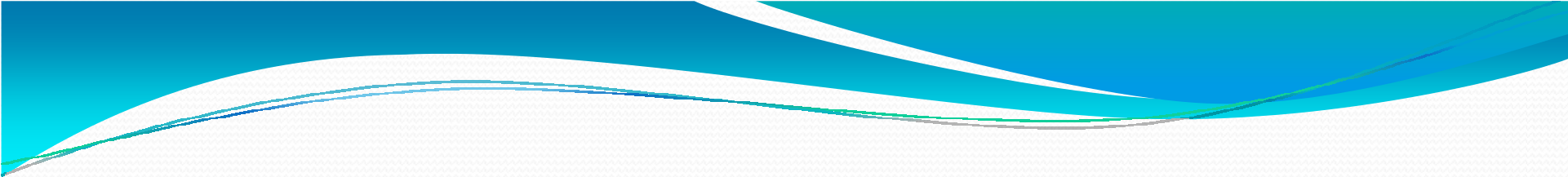


**Research in
Financial and Actuarial Mathematics
Institute for Financial and Actuarial Mathematics (IFAM),
Department of Mathematical Sciences**

Group Interests/Specialization:

Actuarial Mathematics (Pricing Strategies for Non-Life products; Bonus-Malus Automobile Insurance Systems; Competitive Markets; Ruin Theory interplay between Actuarial and Financial Models; Heavy-Tailed Distributions and Risks; Dependent Insurance),

Financial Mathematics (Derivatives – Greeks; Pricing and hedging in incomplete markets; Mathematical Risk Theory; CAT & Structural Bonds; Disappointment Aversion Theory; Lending Rate Models/Policy; Financial Network Theory in Banking System/Indexes; Numerical solutions of portfolio optimisation problems - portfolios with multiple assets, stochastic volatility, and interest rates) ,



Stochastic Differential Equations and Analysis (Stability Theory; Descriptor Stochastic Systems; Delay Stochastic Systems; Numerical methods for stochastic optimal control problems; Numerical methods for optimal stopping; Stochastic partial differential equations and their numerical solutions and stochastic filtering theory),

Operational Research (Multi-criteria optimisation; Constrained problems of optimal control)

Control & System Theory (Robust and Optimal -Deterministic and Stochastic- Control; Stability Theory; Pole Assignment; Theory Descriptor Systems; Discretization Techniques; Matrix Pencil Theory).

Members of IFAM

- **Dr Athanasios (Thanasi) Pantelous** (Reader, Director of IFAM)(aap@liv.ac.uk)
- **Dr Corina Constantinescu** (Lecturer) (constanc@liv.ac.uk)
- **Dr Bujar Gashi**(Lecturer) (Bujar.Gashi@liv.ac.uk)
- **Dr Olivier Menoukeu Pamen** (new Lecturer-starts July 2012)
- **Dr Apostolos Papaioannou** (Lecturer) (papaion@liv.ac.uk)
- **Dr David Siska** (Lecturer) (dsiska@live.ac.uk)

Currently, we supervise **10** PhD students (4 have obtained PhD Scholarships)

MSc in Financial Mathematics

& UG course in Mathematics with Finance

Our UG/PG programmes in **Financial Mathematics** with 450/83 students, have been established to provide the necessary **mathematical** and **financial** tools for suitably qualified students, opening up career opportunities in

- **investment banks,**
- **financial and management consultancies,**
- **auditing firms,**
- **financial institutions and**
- **government departments**

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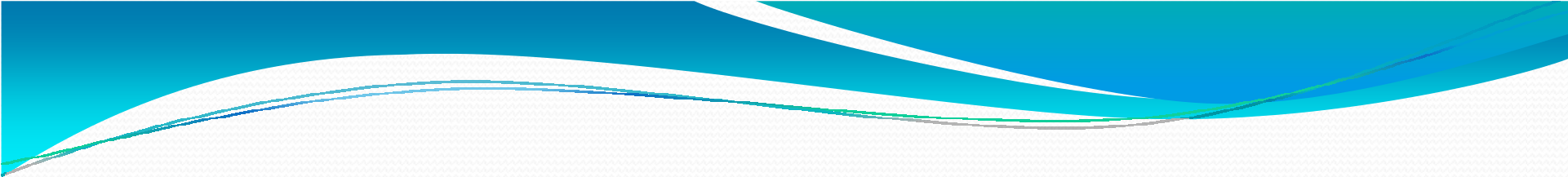


Our Vision - IFAM

- To provide *clarity* about our research priorities and *leadership* in the area of Actuarial and Financial Sciences
- To establish *new collaborations* and *partnerships* with significant research centres in a national and international level.
- To achieve *international benchmarks* and **high-standards** for our activities.
- To impact *economic growth* through mathematical tools, for significant Actuarial and Financial Problems (for instance, Insurance Pricing Strategies).

cont- Our Vision - IFAM

- To drive *knowledge exchange* and *innovation* among academic staffs and PhD students. Our activities will be an excellent opportunity for our PhD and MSc students in Financial Mathematics to receive knowledge from world-leading researchers in new quantitative techniques, and approaches with potential applications to Finance and Insurance.
- To sustain *multi-disciplinary research* between different Departments and Schools in our University (Department of Mathematical Sciences, School of Engineering, and Management School). IFAM is already participating actively in the multi-disciplinary Institute for Risk & Uncertainty.



Actuarial & Financial Mathematics 2012: Theory & Applications

Hon. Prof. Hans Gerber (Department of Actuarial Science, Faculty of Business and Economics, University of Lausanne, Switzerland)

Prof. Hansjoerg Albrecher (Department of Actuarial Science, Faculty of Business and Economics, University of Lausanne, Switzerland)

Prof. Michael Beer (Institute for Risk and Uncertainty, School of Engineering, University of Liverpool, UK)

Prof. Jan Wenzelburger (Management School, University of Liverpool, UK)

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- **Dr. Ronnie Loeffen** (School of Mathematics, University of Manchester, UK)
 - **Dr. Andreas Tsanakas** (Faculty of Actuarial Science and Insurance, Cass Business School - City University London, UK)
 - **Dr. Sultan Hussain** (COMSATS Institute of Information Technology Abbottabad, Pakistan)

Many Thanks to

Apostolos & Corina





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*Thank you again to our
distinguished guests
for contributing!*