

Faculty of Business, Law and Art – Annual Reports for Research Centres (2015-16)

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| Name of Centre | Centre for Risk Research |
| URL of its website | http://www.southampton.ac.uk/risk |
| For Academic Year 2015-16 | |
| Names and schools of all current members of the Centre | <p>Professors</p> <p>Prof. Chris Chapman, Southampton Business School Prof. Taufiq Choudhry, Southampton Business School Prof. Con Connell, Southampton Business School Prof. Brenda Hannigan*, Head of Law School, Southampton Prof. Will Jennings, School of Social Sciences, Southampton Prof. Johnnie Johnson, Southampton Business School Prof. Frank McGroarty, Southampton Business School Prof. Christophe Mues, Southampton Business School Prof. Ming-Chien Sung, Southampton Business School Prof. Stephen Ward, Southampton Business School Prof. Richard Werner, Southampton Business School Prof. Simon Wolfe, Southampton Business School Prof. Huifu Xu*, Southampton Business School</p> <p>Other key academic staff</p> <p>Dr Bart Baesens, Southampton Business School Dr Mario Brito*, Southampton Business School Dr Jeremy Cheah*, Southampton Business School Dr Maxwell Chipulu, Southampton Business School Dr Ian Dawson, Southampton Business School Dr Ian Harwood, Southampton Business School Dr Jonathan Klein, Southampton Business School Dr Konstantinos Katsikopoulos*, Southampton Business School Dr Richard McGee*, Southampton Business School Dr Tiejun Ma, Southampton Business School Dr Alasdair Marshall, Southampton Business School Dr Tri-Dung Nguyen, Southampton Business School Dr Andrew Urquhart, Southampton Business School Dr Yue Wu, Southampton Business School Dr Jize Yan*, Electronics & Computer Sciences, Southampton</p> <p>Research Associates</p> <p>Dr Peter Fraser-Mackenzie, Southampton Business School Dr David McDonald, Southampton Business School Mr Juan Carlos Moreno Paredes, Southampton Business School Mr Nikoloas Kililis, Southampton Business School</p> |

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| | <p>External Members</p> <p>Prof. Stefan Lessmann, Humboldt University Berlin Prof. William Benter, Visiting Professor, Southampton Business School Dr Itiel Dror, Cognitive Consultants International Dr Raquel Florez-Lopez, Pablo Olavide University of Seville Mr Garry Honey, Visiting Senior Fellow, Southampton Business School Mr Matthew Leitch, Visiting Lecturer, Southampton Business School Dr Andrew Grant, School of Finance, University of Sydney Mr Alastair Allison*, Chief Risk Officer, Zurich (UK) Insurance Plc. Dr Keith Smith*, Risk & Decision Making Consultant</p> <p>* = new Centre member</p> |
| <p>Names, job titles and FTE status of any staff employed exclusively on behalf of the Centre (if any)</p> | <p>Dr Peter Fraser-Mackenzie, KTP Research Associate Dr David McDonald, EPSRC Research Fellow Dr. Jason Wang, Research Fellow Mr Nikoloas Kililis, Research Fellow</p> |
| <p>New academic appointments</p> | <p>Dr Mario Brito, Lecturer in Risk Analysis and Risk Management Dr Konstantinos Katsikopoulos, Associate Professor of Behavioural Operations</p> |
| <p>Very brief details of any seminars, meetings, conferences or workshops explicitly badged as Centre events</p> | <p>The Centre for Risk Research hosted a seminar series exploring a variety of topics related to risk and decision making, including speakers from UK and international universities, a speaker from industry, and PhD students from Southampton Business School (10 seminars in total).</p> <p>The Centre for Risk Research (sponsored by the UK Economic and Social Research Council) played a leading role in organising, chairing and facilitating the first China-EU Big Data and Finance Symposium in Shenzhen, China, in 2016: attracted over 300 delegates (including over eighty CEO/CTO/directors/government officials) from over 140 academic, industry and government organisations.</p> <p>The Centre for Risk Research acted as Associate Sponsor of the 16th International Conference on Gambling & Risk Taking, held in Las Vegas in June 2016: attracted 600 delegates from 31 countries from a wide range of disciplines including researchers and leaders from around the globe, together with regulatory and government officials.</p> <p>The Centre for Risk Research hosted separate meetings with the 'Association for Insurance and Risk Managers in Industry and Commerce' (AIRMIC), the UK Foreign & Commonwealth Office, the Asia Pacific Association for Gambling Studies (APAGS), Zurich Insurance Plc, 4Most Europe, Seven Investment Management and Star Financial Systems to explore opportunities for research collaborations, initiatives to improve employment prospects for the School's graduates and</p> |

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| | educational enhancement activities. |
| Papers, books and other REF-able outputs published in 2016 | <p>Outputs by CRR members: 53 papers accepted or published in international refereed journals, 43 conference papers and 6 book chapters .</p> <p>In addition, the CRR produced:</p> <ul style="list-style-type: none"> • a risk management guidance document titled ‘Directing Risk Management in Organizations: Guidance from the Centre for Risk Research’, • a discussion document titled ‘Why Risk Cultures Need Prudence’, a • the British Standards Institution’ standardization of risk management via representation on the RM/1 (risk management) committee. |
| PGR students: a) completions b) new enrolments c) total numbers | 12 6 41 |
| Details of Research Grants and Research Activities | <ul style="list-style-type: none"> • Ma, T., Sung, M. and Johnson J.E.V. £400,000 (Shenzen Government, China and Audaque). Building a Big Data supported financial services platform. J.E.V. Johnson, • Sung, M., Ma, T., Johnson, J.E.V. £10,000 (ESRC Accelerating Impact Award). TreeNet forecasting of spread trading risk. • McGroarty, F., Johnson, J.E.V., Sung, M.C., O’Sullivan, P., McGee, R., Ma, T. and Urquart, A. £247,000 (Seven Investment Management). Developing flexible portfolio optimisation models for strategic asset allocation • Paci, F., Sassone, V., Ma, T., Farrer, D. (IBM), and Howard, G. (Cyber Security Society). £106,772 (£53,361 from HEA). Enhancing campus cyber security through constructivist student learning. • Johnson J.E.V., McGroarty, F., Sung, M. McGee R., Ma, T., Cheah, J. £270,000 (Seven Investment Management / ESRC (Impact Acceleration Award)). Developing an innovative, cloud-based risk management framework. • Sung, M.C., Johnson, J.E.V., Ma, T., Baesens, B., Florez Lopez, R, and Lessmann, S. Awarded €30,000 by the Ministerio de Economia y Competitividad- Spanish National Research Council for their 2015/18 project: <i>Collaboration, risk management and governance in SMEs: Drivers for competitiveness and international entrepreneurship.</i> |

- Ma, T., Sung, M. and Johnson J.E.V., Lessmann, S., and Flores Lopez, R. **£296,000** [£150K (Audaque software and staff support), £120k (Audaque Big data computing infrastructure), £5k (Audaque travel/subsistence), £21k (ESRC IAA grant)] Effective risk management for Big Data-supported mobile finance.
- Sung, M., McGroarty, F., Johnson, J.E.V., Ma, T., McGee, R., and Urquart, A. Awarded **£80,000** from Seven Investment Management for a project titled 'Developing and testing a risk tolerance questionnaire for investors'.
- McGroarty, F., Sung, M.C., Ma, T., Johnson, J.E.V., Awarded **£90,000** by Seven Investment Management: Risk Factor Model Portfolios for Retail Investors
- McGroarty, F. Awarded **£50,000** (ICURe Innovation to Commercialisation (funded by HEFCE and InnovateUK)) to explore commercialising a new statistical methodology that was developed in collaboration his PhD student, Paul Gaskell.
- Johnson, J.E.V., McGroarty, F., Sung, M.C., McGee, R., and Ma, T. **£266,000** (£166k jointly funded by Innovate UK, ESRC, EPSRC and Seven Investment Management (7IM) and £100k re: data/software and management support from 7IM: KTP 010262). Creating and embedding an innovative uncertainty control system for asset allocation decisions.
- Sung, M., Ma, T., Johnson, J.E.V. and Vaughan Williams, L. **£40,000** (Star Financial Systems). Managing uncertainty through sophisticated quantitative analysis of financial decisions.
- Sung, M., Ma, T., Sung, M. and Johnson, J.E.V. **£174,000** (Kx Systems). Kdb database platform, optimised for streaming, real time and historical Big data analytics.
- Ma, T., Sung, M. and Johnson, J.E.V. **£150,000** EPSRC funded Southampton Data Science grant to visit Audaque Ltd, "a world-leading firm in Big data quality" and develop research data and Big Data quality support for research collaboration.
- Sassone, V., O'Hara, K.M., Ma, T., Will, G., and Stalla-Bourdil, S. Awarded **£225,000** (GCHQ). Effective Big Data anonymization techniques.
- Sung, M.C., Ma, T., Johnson J.E.V. and Moreno Paredes, J.C. were awarded the 'Certificate of Excellence' by the Technology Strategy Board and awarded the highest grade of 'Outstanding' by the Knowledge Transfer Partnership Grading Panel for

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| | <p>performance of a research project with London Capital Group (£149,000, 2012/5): “Developing a real-time model of client trading performance in order to strengthen risk management strategy” (KTP008952). The project was deemed to have ‘strengthened competitiveness, wealth creation and economic performance of the UK by the enhancement of knowledge and skills in the stimulation of innovation’.</p> <ul style="list-style-type: none"> • Marshall, A. was awarded a Faculty VC PGR scholarship for a cross-school project on “Managing Flood Risk in the UK”. This will fund a PhD student for three years of study and will come with some additional support offered by the British Law Association and the Institute for Risk Management. |
| <p>Any consultancy and enterprise contracts not included in the attached list</p> | <ul style="list-style-type: none"> • Establishing root causes for loss of communication with MYRTLE-X, deep ocean instrument platform (National Oceanography centre). M. Brito • Analysis and revision of TK churn modelling processes using SAS (Techniker Krankenkasse (second largest public health insurance company in Germany). S. Lessmann • Development of an empirical guide to route scheduling for sales agent using social media data, natural language processing and supervised machine learning.(Metro GroupProject). S. Lessmann |
| <p>Short courses or other forms of CPD developed and delivered</p> | <ul style="list-style-type: none"> • 2 day seminar fraud modelling using supervised, unsupervised and social network analytics, SAS Turkey. (S.Lessmann) • 3 day seminar Credit Risk modelling, SAS Turkey.(S.Lessmann) • 3 day seminar Credit Risk modelling, SAS Milan.(S.Lessmann) • 3 day seminar Credit Risk modelling, SAS France.(S.Lessmann) • 2-day workshop on 'Cognitive Factors in SOCO (Scenes of Crime Officer)/SCI (Crime Scene Investigations) Decision Making', Hertfordshire, Bedfordshire and Cambridgeshire Police. (I Dror). • Three 2-day workshops on 'Cognitive Factors in Forensic Decision Making', State of California Department of Justice. (I Dror). • A workshop on 'Understand Your Brain and Learn Better, Faster, and Longer', European Commission. 7 September 2016. (I Dror). • A 2-day workshop on 'Cognitive Factors in Forensic Decision Making', Boston Police Department. (I Dror). |
| <p>A brief “business plan” outlining planned</p> | <p>The Centre for Risk Research (CRR) is a multi-disciplinary team of academics who have developed an international reputation for</p> |

activity and any developments for the next three years

excellence in the related fields of decision making, risk analysis, risk management and risk taking research. In these areas we have a track record in successful research grant applications, papers in 3* and 4* international journals and in producing leading research text books. The CRR offers the University an important competitive advantage, as there are no comparable risk-related research centres in the country embedded in Russell group universities which have been established for as long or which offer the combination of 'hard' and 'soft' risk skills for which we have an international reputation.

We believe that a move to substantially increase our *research reputation*, by leveraging our current international standing in the risk and decision-making areas, can significantly improve our long-term aims for growth whilst reducing our strategic risks. To take this forward we have undertaken the following initiatives:

- Development of links with Lloyds Register to explore a range of funding opportunities for enterprise risk management projects
- Development of links with major companies in China, including Audaque, exploring opportunities to secure funding for post-doc researchers to collaborate on projects with CRR.
- Edit special issue of the International Journal of Forecasting on 'Prediction Markets'
- Development of links with city-based organisations, including 4Most Europe and Analytics AI to develop a range of finance based funded research projects
- Establishing a network of formal links with universities in Spain, Germany, mainland China, Taiwan, Macao, Hong Kong, Finland to establish a range of research collaborations.
- Developing our partnership with SMMI (eg leading a work package for a SMMI partnership with TCOMS and the National University of Singapore).
- Developing formal links with Asia Pacific Association for Gambling Studies to secure future research collaborations and funded research projects
- Developing links with the 'Association for Insurance and Risk Managers in Industry and Commerce' (AIRMIC), with the aim of securing sponsorship for students and access to leading commercial risk managers
- Developing a long-term collaboration with Huawei Ltd., with the aim of securing future research funding.
- Establishing long-term collaboration with GCHQ on cyber-security projects
- Develop social media promotion of activities of CRR, with the aim of securing further industry sponsorship
- Launch of a risk alumni network via LinkedIn pages on the CRR website.
- Maintaining and developing relationships with a number of existing strategic partners (academic and commerce/industry) in order to explore future funding opportunities
- Developing relationships with commercial partners to facilitate career opportunities for risk students (MSc and PhD).

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| | <ul style="list-style-type: none"> • Develop strategic partnership with Harding Centre for Risk Literacy, Max Plank Institute for Human Development • Develop and promote formal staff exchange programme with Humboldt university, Berlin • Continue to develop work (as we hold position of co-chair) for the European Safety and Reliability Association |
| <p>Details of any funding requested for academic year 2016-17</p> | <p>We need funding for trips to visit existing a future strategic partners and to visit potential sponsors of projects.</p> <p>However, our main need is for substantial additional hours to support the various initiatives we are undertaking. These will be impossible without such support. A minimum of 750 WAM hours is required, but to properly support all the initiatives we propose would require the equivalent of a full time member of staff (1525 WAM hrs). We estimate that provision of 1525 WAM hours, would become self-funding within 3 years.</p> |