

Emergency Management And Disaster Resilience

The Simulation Australasia Emergency Management and National Security (EM&NS) Specialist Community Chair invites you attend an **Emergency Management** and **Disaster Resilience** day to be held on Wednesday 28 September 2016 as part of the Australasian Simulation Congress (ASC).

The day combines an exciting keynote speaker address from Professor Edwin Galea supported by a diverse panel of professionals with applied and academic fire and evacuation expertise and an informative joint Emergency Management Case Studies panel with leaders from across the nation.

The organisers encourage members of the emergency management and response agencies and organisations, humanitarian relief organisations, researchers and developers with an interest in simulation and exercising to register to attend the day. More information on the ASC and registration details can be found at www.simulationcongress.com.

Program Wednesday 28 September

0830-0915: Keynote Prof Edwin Galea
 0915-1000: Panel Supporting Keynote
 1000-1030: Morning Tea
 1030-1200: Emergency Management
 Case Studies Panel
 1200-1330: Lunch
 1245-1315 EM&NS Special Interest Group
 Meeting.
 1330-1500: Academic Papers
 1500-1530: Afternoon Tea
 1530-1700: Academic Papers



Keynote Address

The keynote address will be delivered by Professor Edwin Galea from the University of Greenwich. Professor Galea is the founding director of the Fire Safety Engineering Group (FSEG) of the University of Greenwich in London and the Vice Chairman of the International Association of Fire Safety Science.



Keynote Address: Engineering Safety, Security and Efficiency through Fire and Evacuation Simulation

Advanced computer simulation of fire and evacuation is used in the design of modern structures to ensure enhanced; **safety** - in the event of an emergency, **security** - providing protection from terrorist inspired incidents, and **efficiency** - in terms of flows of people in crowded spaces. This presentation will briefly discuss recent research to enhance fire and evacuation simulation including: evacuation of high-rise buildings using lifts, the impact of security bollards on evacuation, improving wayfinding in complex buildings, human behaviour in domestic fire situations and coupled fire and evacuation simulation. New applications in large urban-scale evacuation scenarios will also be considered.

Professor Galea will also be leading a **Master Class** on Monday 26 September entitled **Principles and Practice of Evacuation Simulation**.

Masterclass: Principles and Practice of Evacuation Simulation

Multi-agent evacuation simulation enables the prediction of human behaviour and performance during emergency evacuation – predicting likely evacuation times, identifying potential bottlenecks and, in extreme cases, predicting likely numbers of fatalities and injuries. In this way the layout can be optimised, while it is in the early design phase, avoiding costly modifications later, when the structure is built. To develop a good evacuation model we need real world data to identify relevant behaviours and to calibrate our models. Generating this data is challenging – logistically, technically, ethically and politically. This Master Class will discuss some of the data used to identify and quantify human performance and behaviour underpinning evacuation simulation and how we use this to develop and then utilise evacuation simulation for buildings, aircraft, ships, trains and even the larger urban environment. Examples will include issues associated with the evacuation of the mobility impaired with applications not only to hospitals and care facilities but the general built environment.

See: <http://www.simulationcongress.com/program/master-classes/edwin-galea-master-class/>

Keynote Supporting Panel

Panelists:

- Deputy Chief Officer David Youssef, Victorian Metropolitan Fire Brigade
- Professor Vasily Novozhilov, Director Centre for Environmental Safety and Risk Engineering, Victoria University
- Hank van Ravenstein, Principal Manager, Fire Risk Management Unit, Department of Health and Human Services
- Andrew Hart, Solid Propellant Discipline Lead, Defence Science and Technology Group.

The Keynote Supporting panel is an opportunity to hear from leaders with applied and academic fire expertise who will discuss:

- case studies in modelling;
- fire science;
- instrumentation to support measurement; and,
- future expectations for modelling in the field.



Industry Case Study Panel

Panelists:

- Mark Cresweller Director General Emergency Management Australia
- Lew Short, General Manager Risk, Consequence and Resilience Emergency Management Victoria.
- Conrad Barr, ACT Justice and Community Safety Directorate
- Marcus Thatcher, Research Scientist, Weather, Regional Climate Variability and Extremes, CSIRO Oceans and Atmosphere
- Brett Patterson, International Training Coordinator, Red Cross

The Emergency Management Case Studies panel is an opportunity to hear from leaders in the sector who will describe:

- case studies;
- examples of investment in simulation;
- the business case; lessons learned;
- challenges; and,
- future expectations.



Academic Papers

The afternoon sessions will be devoted to a range of academic papers relating to modelling and simulation in emergency management.

Paper Session One

- Social Simulation for Analysis, Interaction, Training and Community Awareness (RMIT)
- Fires and Floods: Predicting Natural Hazards (CSIRO)
- Incident Management Training USA style (AFAC)
- Exploring Hybrid Simulations (Centre for Humanitarian Leadership)
- Design and Operation of the RPAH Fire Training Facility

Paper Session Two

- A Bushfire Evacuation Planning Service Utilising Multiple Simulation Systems (IBM)
- Bushfire BLOCKS for Modelling Community Evacuation (RMIT)
- Intentional Small Scale Disasters: Simulating Oil Spills to Develop Hands-on Environmental Remediation Experience. (UTS)
- An Integrated GPU Based Framework for Modelling Flood and Fires in Real Time. (CSIRO)
- Ambulance Victoria Simulation Programs.

For more information, please contact:

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