

CROWD SAFETY SUMMIT AUSTRALIA
MAY 2023
UNSW, SYDNEY



Crowd Safety Summit Australia

Dear Recipient,

You are cordially invited to the upcoming **Crowd Safety Summit Australia**, at the University of New South Wales (UNSW), Sydney. This event is organised and hosted by Dr Milad Haghani of UNSW School of Civil & Environmental Engineering and is held over two consecutive days May 22 & 23, 2023, in a hybrid mode consisting of in-person and online options. The event is free of cost and fully catered.

An outstanding group of speakers are presenting the latest state of research and practice as well as current challenges in crowd safety. This will mark the first event of its kind where international crowd safety practitioners, academics and stakeholders gather together to exchange ideas and experiences and develop a roadmap for the future. We believe that this initiative will have much to offer for the benefit of public safety worldwide. We would be delighted if you contributed to this cause through your attendance and participation in the discussions. If you are a stakeholder in public and crowd safety, our academics and practitioners are eager to hear your insights to better align their efforts to our societal needs.

A diverse range of topics will be discussed including:

- Retrospective analysis of recent crowd accidents
- Applications of AI and technology in crowd management
- Experiences from FIFA World Cup and Olympic crowds
- Modelling and simulation of crowds
- The state of academic crowd research
- Terror risk appraisal in crowded spaces
- The role of community preparedness in managing internal and external risks to crowds

We would be delighted to have your feedback and perspectives during the Q&A sessions and panel discussions. Please find the event program attached. We look forward to meeting you.

Date & Time: Monday 22 & Tuesday 23, May 2023 (9:00 am – 5:00 pm)

Location: John Niland Scientia Building (G19) Library Road, UNSW Kensington, NSW 2033

**Please find the registration links on the final page of the event program.
Any enquiry can be directed to milad.haghani@unsw.edu.au**



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Crowd Safety Summit Australia

Date and Time:

Monday 22 May 2023

9:00 am – 5:00 pm

Location:

Galleries, John Niland Scientia Building (G19)

UNSW, Kensington Campus (online & in-person event)

Time	Topic	Speaker
9:00 am – 9:15 am	Registration	
9:15 am – 9:30 am	Opening and Welcome	
9:30 am – 11:00 am	<p>Topic 1: Introduction to Crowd Science</p> <p>Topic 2: Crowd behaviours observed in controlled laboratory conditions – What can we learn?</p>	<p>Roderick van Gelder – Event Safety Institute</p> <p>Milad Haghani – UNSW</p>
11:00 am – 11:30 am	Break & Morning Tea	
11:30 am – 1:15 pm	<p>Topic 3: Crowds as Complex adaptive systems, new tools to model emergent crowd behaviour</p> <p>Topic 4: Learning from near misses: Experiences from Melbourne Fed Square live screenings</p> <p>Topic 5: Can crowd simulation models be misleading? And how should we assess their accuracy?</p>	<p>Andrew Tatrai – Dynamic Crowd Measurement (DCM)</p> <p>Matt Coughlan – OHS Manager at Fed Square</p> <p>Milad Haghani Senior Lecturer, rCITI</p>
1:15 pm – 2:00 pm	Lunch & Networking	
2:00 pm – 4:45 pm (Break included)	<p>Topic 6: The sociology of crowds and sports fan violence</p> <p>Topic 7: Where Science Meets Reality: The Influence of Individual Characteristics on Crowd Dynamics</p> <p>Topic 8: Dynamics of Pedestrian Crowds Across Densities and Scenarios: Unity in diversity? – A modeller's perspective</p> <p>Topic 9: Arcadia/Worldstage 2022 Fan Zones in the desert</p>	<p>Ramon Spaaij – Victoria University</p> <p>Paul Georg – Fire Protection Association Germany (vfdb e.V.)</p> <p>Alexandre Nicolas – French National Centre for Research (CNRS)</p> <p>Steve laws – Taylor bridges consultancy</p>
4:45 pm – 5:00 pm	Discussion and closing remarks	

Crowd Safety Summit Australia

Date and Time:

Tuesday 23 May 2023
9:00 am – 5:30 pm

Location:

Galleries, John Niland Scientia Building (G19)
UNSW, Kensington Campus (online & in-person event)

Time	Topic	Speaker
9:00 am – 9:15 am	Registration	
9:15 am – 9:30 am	Opening and Welcome	
9:30 am – 11:00 am	<p>Topic 1: Inside the Canopy of a Crowd</p> <p>Topic 2: 100+ years on research on crowds – Past, present and future challenges</p>	<p>Alan Wilson – Crowd Control Guy</p> <p>Claudio Feliciani – The University of Tokyo</p>
11:00 am – 11:30 am	Break & Morning Tea	
11:30 am – 1:15 pm	<p>Topic 3: The current state of academic research on crowd behaviour – Do we need a paradigm shift in thinking?</p> <p>Topic 4: Data applications for practical crowd management</p> <p>Topic 5: Quantitative data in terror risk assessments, greater security consciousness and resilience.</p>	<p>Milad Haghani – UNSW</p> <p>Travis Semmens – Australian Concert & Entertainment Security Pty Ltd</p> <p>Zoe Miles & Nazli Hocaoglu – Vardogyir</p>
1:00 pm – 2:00 pm	Lunch & Networking	
2:00 pm – 4:15 pm	<p>Topic 6: Preparing mass crowds for internal risks (e.g., stampedes) and external risks (e.g., terror attacks). The role of behavioural modification & educational</p> <p>Topic 7: Pedestrian planning for Sydney 2000 Olympics</p> <p>Topic 8: How can CrowdScan technology help to make events safer?</p> <p>Topic 9: Risk and Resilience in crowd and event safety: implementing the risk resilience continuum</p>	<p>Milad Haghani – UNSW</p> <p>John Webster – Mott MacDonald</p> <p>Anton Dierickx – CrowdScan</p> <p>Ben Crabb – UK Cabinet Office Emergency Planning College</p>
4:15 pm – 4:30 pm	Discussion and closing remarks	
4:30 pm	Networking & Drinks	

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Roderick van Gelder – Event Safety Institute



Andrew Tatrai – Dynamic Crowd Measurement (DCM)



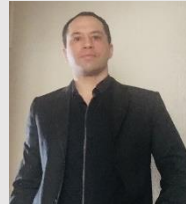
Matt Coughlan – OHS Manager at Fed Square



Ramon Spaaij – Victoria University



Paul Geoerg – Fire Protection Association Germany (vfdb e.V.)



Alexandre Nicolas – French National Centre for Research



Steve Laws – Taylor bridges consultancy



Alan Wilson – Crowd Control Guy



Claudio Feliciani – The University of Tokyo



Travis Semmens – Australian Concert & Entertainment Security



Zoe Miles & Nazli Hocaoglu (co-presenters) – Vardogyir



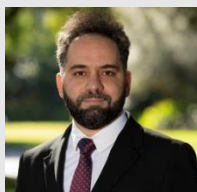
Anton Dierickx – CrowdScan



Ben Crabb – The Emergency Planning College



John Webster – Mott MacDonald



Milad Haghani – UNSW, Sydney

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Roderick van Gelder started his career in the performing arts in 1976. He quickly moved up through the Dutch National Ballet and Dutch Opera Foundation before starting a career in production management and lighting design. In 1990 he was offered the position of Production Manager for Sydney Dance Company. In that position Roderick oversaw national and international tours. In 1998 Roderick was appointed Technical Manager for Playbill Venue Management, operators of the Hordern Pavilion and Royal Hall of Industries in Sydney. Overseeing the renovations of both venues he also developed all technical policies and set-up the technical team to deliver the wide variety of public events. From 2005 Roderick focussed on providing risk management and workplace health and safety advice for the entertainment industry through his company Stage Safety pty ltd. Roderick jumped on the opportunity to attend the Prof. Keith Still course in 2015. He attained a Level 5 Diploma (with distinction) in Crowd Science and has been applying that knowledge to a raft of public, corporate, music and festival events. Early 2022 Roderick was approached by the Event Safety Institute in the Netherlands who on behalf of Prof. Keith Still were looking for a trainer to deliver crowd management training in Australia.



Dr **Andrew Tatrai** is a crowd management professional with a 40-year history in major event management and crowd security. Starting Australian Concert and Entertainment security in 1980 and developing the first Australian Crowd management course in 1993. Andrew has used this experience to lead research to solve Crowd management by measuring the influence of crowd density and flow speed on crowd mood to alert and support in “the minute” action that is required by crowd managers. This technology replicates what practical crowd managers do, we observe monitor and intervene when crowd mood becomes negative. So, technology can now help us to replicate the observation stages crowd managers make. The computational power and superior vision of cameras and software do this far more efficiently than humans. This technology can now guide, teach, and provide evidence for crowd management support and advance research of crowds as complex adaptive systems using new metrics to model the dancing landscapes of complex systems. Andrew’s current research area is measuring crowd sentiment as an extension of the 2022 PhD thesis “Emergent behaviour in crowds”.



Matt Coughlan is an OHS Manager at Fed Square (Melbourne Arts Precinct Corporation). Matt works in collaboration with the Events and Security teams to ensure a safe accessible and secure event experience. His experience includes live screenings of the FIFA World Cup, New Years Eve and other major public engagement events.

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Professor **Ramón Spaaij** is a sociologist based at Victoria University, where he co-leads the Applied Security Science Partnership (ASSP) and the Health, Wellbeing and Community Research Program. Ramón is also Visiting Professor at the Utrecht University School of Governance, the Netherlands. His work combines sociological and public policy approaches to address questions of social cohesion, conflict and social change. He is co-author of *The Age of Lone Wolf Terrorism* (Columbia University Press, with Mark S. Hamm) and has published many books, articles, and papers about community engagement, inclusiveness in sports and public order management in football. Ramón has an extensive record of collaboration with government, industry, and community organisations, including the United Nations, US Department of Justice, Defence Science and Technology (DST), Victoria Police, and many others.



Dr. **Paul Georg** is a research fellow at the Association of Fire Protection Engineering Germany (vfdb e.V.) and an engineering enthusiast for the empirics of pedestrian dynamics. He is a PhD alumnus of the Bergische Universität Wuppertal (Germany). Paul's work focuses on heterogeneous characteristics of crowds and their influence on parameters of movement. He is passionate about the question of what individual characteristics in a crowd support safe, comfortable movement and how performance of geometries is affected. Paul will talk about how the movement of homogeneously and heterogeneously composed crowds differs, which phenomena can be observed and which consequences this may have for application. He advocates the courage to acknowledge the individuality of people and to use it as an opportunity to create optimized conditions for entire systems.



A tenured researcher at the French National Research Centre (CNRS), Dr **Alexandre NICOLAS** investigates human mobilities and develops physics-based models for dense crowds and vehicular traffic. Trained as an engineer and a physicist at École polytechnique, France, and the University of Cambridge, UK, he received his PhD in Materials' Physics from Université Grenoble-Alpes, France, in 2014, with a dissertation on the coarse-grained modelling of amorphous solids. His interests then broadened to the modelling of pedestrian crowds, especially at high densities, both in evacuation conditions and in daily-life conditions, as well as vehicular traffic. Before joining CNRS, he worked in a private consultancy specialised in mobility and transport planning. During the COVID-19, he was involved in modelling viral transmission in crowds in the frame of the French Research-Action programme. He is currently one of the PIs of the French-German MADRAS project dedicated to propounding new models for dense crowds.

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Steve Laws is a respected industry leading professional who served with Thames Valley Police for a full 30 years specialising in firearms, close protection, public order and training. He is now a specialist member of International Institute of Risk and Safety Management and a corporate partner with the Institute of Strategic Risk Management. He has a Bachelor's Degree in Crowd Safety Management and is a qualified Safety Officer. He has 15 years industry experience in event safety training and consultancy work with institutions to support safety compliance audit, review and development of strategic safety management protocols, working with established Football Safety Officers, Stadium/Event Managers, trainers and assessors. He is a specialist member of International Institute of Risk and Safety Management (SIIRSM) and a corporate partner with the Institute of Strategic Risk Management (ISRM).



Alan Wilson has over 40 years hands-on experience working on the frontline in Crowd Management. His track record includes planning and managing the movement of 103,000+ spectators at 30 events over 10 days in one venue co-ordinating 190+ security staff at a major International Event. Over the past decade Alan has moved more into the area of visually planning Crowd Movements in his bid to Keep People Safe at Events. He is therefore very experienced at interpreting written Crowd Management Plans and enhancing them by providing interactive and dynamic event maps showing "Crowd Movements over Time". Alan's work has also progressed into the digital realm of presenting 3D maps and fly-around videos. Alan's academic background is in Psychology, Education and Training and is one of only a hand-full of Crowd Managers in Australia who is licensed as a Crowd Controller. Alan has lectured at TAFE, AIUS and Curtin University at both undergraduate and Master's levels. In 1997 he received the Outstanding Tutor of the Year Award (1997) for his innovative teaching style. Born out of Alan's in-depth Visual Analysis Itaewon Halloween Tragedy presentation comes Inside the Canopy of a Crowd which highlights innovative ways to analyse movements in high density crowds.



Dr Claudio Feliciani is Project Associate Professor at The University of Tokyo, Japan. Although having a background in engineering, he has always had a profound interest on social sciences. Therefore, his research path has naturally drawn him to pedestrian traffic and crowd management, a crossroad between engineering and social sciences. In this context, he made use of his knowledge on physics and mathematics to create methods to assess crowd condition and develop models for simulation. He has published several journal articles and conference papers. In 2021, he had been co-awarded the Ig Nobel Prize in kinetics for research on the disruption caused by pedestrians distracted by mobile phone use. Beside academic research he has also been active as a volunteer firefighter for several years.

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Travis Semmens is the Managing Director of ACESGroup, one of Australia's leading safety and security providers. Travis has been responsible for leading crowd management, both operationally and strategically, some of Australia's largest events including Vivid Sydney. Travis' extensive career spanning over 30 years has made him the person on-the-ground who the police and event managers consult for timely and vital decisions. His work includes crowd planning and management for events of over a million people in complex urban environments making him a leader in the industry. Travis' key stakeholders include private security guards, crowd management experts and numerous levels of local, state and national police, military and emergency services. Travis holds a Diploma of Risk Management, is a patent owner and Co-Founder of Dynamic Crowd Measurement – an innovative crowd management technology solution. Travis is the author of Crowd Management, the first text to present a system for crowd management which integrates security with the other concerns for the health and safety for crowds, looking at the theories and practices of the management processes, plans, monitoring and evaluation of crowds.



Zoe Miles is dedicated to topics of national security with a focus on terrorism and counterterrorism. Zoe works as the Lead Researcher for Vardogyir, an innovative counterterrorism software addressing ethical and broad-scale community resilience via automated data science. Zoe has contributed to research works including anti-vehicle ramming devices and the shrapnel trajectory data from ballistic tests and more recently, Martyn's Law. Her most recent work has been driven by terrorism-related incidents that detail systemic data on domestic as well as international terrorist incidents. Zoe holds a Bachelor of Arts majoring in Sociology and Security, Terrorism and Counterterrorism at Murdoch University and a Graduate Certificate in Intelligence Analysis at Charles Sturt University.



Nazli Hocaoglu brings her academic and professional skills together to provide legal and governance oversight across several emerging technology companies where data and AI are leveraged to help communities manage critical safety and security decisions whilst upholding individual privacy and human rights. She also sits on the National Board of the Australian Red Cross as a Non-Executive Director (Additional Board Member). Nazli's academic background focused heavily on international human rights law, focusing on international discrimination of minorities, particularly refugees, women and children within Western communities. She is passionate about humanitarian issues and a strong advocate for community resilience. Nazli holds a Master of Law in Human Rights Law from the University of London, as well as Bachelor of International Studies and Bachelor of Laws from Western Sydney University.

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Anton Dierickx is the co-founder and COO of CrowdScan, a patented crowd monitoring technology using a wireless sensor network. He also has a rich history of career in the police force as the Commissioner at the Antwerp Local Police Force, as well as positions such as (Deputy) Chief Public Order, and Deputy chief Special Arrest. He has also had a role as Emergency planning, Public Order & Coordination of large-scale police operations. With more than 10 years of operational experience in different leading roles within the Antwerp Local Police Force and his current position as COO & crowdexpert within CrowdScan, Anton likes to share his practical insights on crowd management, emergency planning, tactical response or use of technologies.



An experienced and demonstrated innovator in crowd and event safety, **Ben Crabb** has worked in the industry for the past 15 years. He has worked nationally and internationally with Formula 1, Formula E, boxing, football, rugby basketball, cricket, and several other large multi-sport events. He has also worked on large- and small-scale music festivals in the UK and abroad. Ben successfully created and compiled the event safety plans for the UK's first Covid-19 socially distance music venue in Newcastle in August 2020 which ran for 6 weeks drawing approval from Public Health England and DCMS. Ben has led many events safety projects in relation to Construction Design Management Regulations and has also delivered training and webinars regarding this across the world. Ben was the Deputy Head of Health and Safety at the Birmingham 2022 Commonwealth Games where he was also the CDM project lead. Ben is currently undertaking a PhD which is focussing on risk and resilience planning, interpretation, and implementation at large and mega events.



Based in Sydney, **John Webster** (BSc, MSc, FAITPM) is a Technical Director within the Mott MacDonald Transport group with over 32 years of experience in transport planning and the pedestrian modelling of high demand pedestrian environments. Currently the Subject Matter Expert on pedestrian movement working with Sydney Metro, he leads the provision of pedestrian planning advice for Metro West stations ranging from overseeing the design and construction of extensive microsimulation models to providing design commentary on the public realm. In his time John has held both managerial and technical positions and has been involved with numerous major sporting events ranging from the role of Pedestrian Planning Manager for the Sydney 2000 Olympic Games to advising on the design of stadia and the movement of people to and from major sporting events such as the London Olympics and various Commonwealth Games. John is a Fellow of the Australian Institute of Traffic Planning and Management and lead author of AITPM's Pedestrian Modelling Guidance published in 2021 and currently in the early stages of planning for the 2nd edition.

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Dr **Milad Haghani** is a Senior Lecturer at UNSW Sydney, an interdisciplinary researcher whose work focuses on Human Factors, Public Safety and Crowd Safety. He is the most published academic author in the field of crowd dynamics with more than 60 first and solo authored publications in this domain. He has been a pioneering researcher in introducing experimental work as well as econometric modelling methods to the field of crowd and evacuation dynamics, dimensions that have significantly expanded the horizons of crowd research and have caused paradigm shifts in thinking and research in this field. He has been the leading advocate for “empirical” and “evidence-based” research in crowd dynamics, giving him the title “the empirical methods guys” in some circles. He has designed, executed, and analysed more than 400 rounds of crowd experiments since 2015, covering a broad range of crowd behaviours, unveiling several new behavioural phenomena, and debunking several mis-conceived theories in crowd science. Arguably, these experiments have revolutionised our understanding of crowd behaviour. He is also the developer of the only crowd simulation software that has been completely founded in empirical evidence and fully calibrated based on experimental data. In 2021 he became the recipient of a DECRA award from the Australian Research Council in recognition of his significant contributions to crowd science. More recently, he has proposed the theory of ‘behavioural intervention’ in mass emergency management advocating for the idea of equipping people with knowledge that can help them survive mass emergencies such as terror attacks in crowded spaces. The extensive experiments that he undertook in 2022 demonstrates the power of ‘behavioural intervention’ in mass emergency management and pave the way for developing educational tools and campaigns.

Registration Links:

Register for **Monday 22 May, In-Person**
Register for **Monday 22 May, Online**

Register for **Tuesday 23 May, In-Person**
Register for **Tuesday 23 May, Online**