

The Team



CENTRE FOR AUGMENTED
HUMAN PERFORMANCE



Dr. Dan Howes

Professor and Head, Department of Critical Care Medicine; Director, Faculty of Health Sciences Clinical Simulation Centre

Research Interests: Simulation, Medical Education

Dr. Howes is dual trained in emergency medicine and intensive care medicine, and is a professor and head of the Department of Critical Care Medicine at Queen's University. His career focus has been on the teaching of resuscitation skills and crisis leadership. Dr. Howes is a graduate and returning scholar of the Harvard Macy Institute, and has won multiple teaching awards including the Canadian Association of Medical Educators' Certificate of Merit for Outstanding Contributions to Medical Education. He is the founder of the Kingston Resuscitation Institute, and established the world's first fellowship training program in resuscitation medicine. He has over 50 publications on an eclectic range of topics including gaze tracking in medical emergencies, the Canadian guidelines on the use of therapeutic hypothermia after cardiac arrest, and the evolutionary rationale for hiccups.

Dr. Howes has been using simulation in his teaching for over 18 years, and has recently been made the director of the Queen's University Faculty of Health Sciences Clinical Simulation Centre. Opening in September of 2011, the centre is one of Canada's newest and largest medical simulation centres. Over 200 students can be taught at the centre at a time in skills ranging from catheter insertion to laparoscopic surgery, to the management of a fully staffed trauma team.



Dr. Paul Hungler

Major (Retired), Royal Canadian Air Force; Assistant Professor, Faculty of Engineering and Applied Science

Research Interests: Virtual and Augmented Reality, Engineering Education

Dr. Paul Hungler is an assistant professor in the Department of Chemical Engineering at Queen's University. He has a very diverse interdisciplinary engineering background with degrees in electrical, chemical and materials and nuclear engineering. Prior to starting his current position, Major (Retired) Hungler served in the Royal Canadian Airforce for 20 years where he held numerous engineering and academic roles. This included postings at CFB Trenton's at 8 Air Maintenance Squadron and its Aerospace and Telecommunications Engineering Support Squadron (ATESS). Dr. Hungler taught engineering at the Royal Military College of Canada and held several administrative roles there including acting head of the Chemistry and Chemical Engineering Department. Prior to retiring from the Canadian Armed Forces (CAF), Dr. Hungler was responsible for the Defence Learning Network (DLN) and on-line learning in the CAF, which included developing and deploying virtual and augmented reality (VR/AR) simulations. Dr. Hungler's research is now focused on developing the next generation of simulation to enhance education and training.



Dr. Adam Szulewski

Assistant Professor, Department of Emergency Medicine; Program Director, Fellowship in Resuscitation and Reanimation; PhD Candidate, Health Professions Education, Maastricht University

Research Interests: Expertise, Eye-tracking, Medical Education

Dr. Adam Szulewski is an assistant professor in the Department of Emergency Medicine, and the program director of the Fellowship in Resuscitation and Reanimation in the Department of Emergency Medicine at Queen's University. His academic interests include the study of cognitive load in medical professionals, the development and assessment of medical expertise, as well as research into human factors in resuscitation medicine. He completed his emergency medicine training as well as a fellowship in Resuscitation and Reanimation Medicine at Queen's University. He has also completed a Master of Health Professions Education at Maastricht University where he is now working on his PhD.

Dr. Szulewski's research combines resuscitation medicine, cognitive psychology, and educational psychology in an effort to better understand how physicians think during medical emergencies. He and his team specialize in using gaze-tracking technology as an adjunct in their research to "get inside the heads" of physicians in both simulated and clinical environments. These data provide unique insights into crisis resource management as well as the decision-making processes of physicians at various stages of their careers.

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Dr. Dirk Rodenburg

Adjunct Professor, Department of Chemical Engineering, Faculty of Arts and Science

Research Interests: Cognition, Human Performance, Real-time Data Feedback

Dr. Rodenburg is an Educational Consultant with the Queen's University Schools of Medicine and Rehabilitation, and a term adjunct professor with the Faculty of Engineering's Department of Chemical Engineering and the Faculty of Arts and Science. In addition to his academic background, he has 20 years of experience as a software entrepreneur and consultant within academia, educational technology, financial services, biotechnology, and scientific instruments, and has played an integral role in the launch of three highly innovative startups. Dr. Rodenburg's research interests include human performance, expertise, cognition, real-time data analytics, data feedback, human-computer interaction, and ethics and privacy. Dirk holds an MA in Adult Education from the University of British Columbia and a PhD from the Faculty of Information at the University of Toronto.



Dr. Ali Etemad

Adjunct Professor, Department of Electrical and Computer Engineering

Research Interests: Artificial Intelligence, Wearables,
Human Computer Interface Design

Dr. Etemad is an assistant professor at the Department of Electrical and Computer Engineering, Queen's University, and director of the Ambient Intelligence and Interaction (Amii) lab. He received his PhD from the Department of Systems and Computer Engineering at Carleton University (Canada). Subsequently, he joined Carleton's School of Information Technology as a postdoctoral fellow and adjunct professor, and has held several lead industrial positions, most notably as the director of data science and intelligent systems at Myant Inc., a Canadian wearable technology and internet of things company.

He currently sits on the advisory boards of a number of high-tech companies in different fields ranging from wearable devices and smart homes to natural language processing. The groundbreaking works that Dr. Etemad has been involved with have featured in media outlets such as The Wall Street Journal, The Huffington Post, CNET, CTV, CBC, Maclean's, and others, and have resulted in a large number of peer-reviewed articles and patents. He has been the recipient of a number of awards, grants, and scholarships, and has delivered several invited talks regarding his work in the industry and academia. He is the Vice Chair (Technical Programme) of IEEE Kingston, sits on the Standards Council of Canada's mirror committee on Wearable Electronic Devices and Technologies, and is a member of technical/reviewing committees for a number of notable journals and conferences in the field including IEEE Trans. HMS, IEEE Trans. KDE, IEEE Access, J. ASOC, J. CVIU, J. NCA, IEEE BSN, ACM SAP, ACM VRST, ACM AutomotiveUI, and others.