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Ottawa Section

IEEE 125th EMBS Seminar Series



Monitoring multiorgan variability in health and illness: Complexity science at the bedside

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The science of complex systems has evolved considerably over several decades and is poised to offer exciting diagnostic and treatment strategies at the bedside. Clinical insights derived from complexity include the important realization of irreducible uncertainty in patient trajectories, and the fact that critical illness is a systemic emergent illness that requires novel data integration techniques. Multiorgan variability monitoring offers a potential means to better track the system state over time. Detecting infection early, determination of critical illness severity and its trajectory, and improved prediction of extubation failure all offer potential clinical applications of variability monitoring. Results and ongoing research in these areas will be discussed. Last, the present and future challenges of applying multiorgan variability monitoring to improve patient care will be highlighted.



Nov 10, 2011

admission is free

18:00 – 19:30 pm

ME-4342

Carleton University

Andrew JE Seely is an Associate Professor of Surgery within the Divisions of Thoracic Surgery and Critical Care Medicine at the University of Ottawa, Associate Scientist with the Ottawa Hospital Research Institute, Chair of Research for the Canadian Association of Thoracic Surgeons, and Director of Research for the Ottawa Division of Thoracic Surgery. Education includes undergraduate honours physics at Carleton University, followed by medical school, general surgery training, and a doctoral degree in basic science from McGill University, and thoracic surgery and critical care medicine training at the University of Ottawa. Scholarly interests include theoretical research exploring the clinical insights of complex systems science, experimental research applying continuous variability analysis at the bedside, and development of means to continuously monitor quality of surgical care. Dr Seely is the founder and Chief Science officer of Therapeutic Monitoring Systems Inc, whose mission is to develop and evaluate software to perform continuous monitoring of multiorgan variability in order to improve care for patients at risk for or with existing critical illness. Dr Seely has published over 30 peer-reviewed papers, presented at numerous international meetings, and was awarded a "New Investigator" Award by the Canadian Institutes of Health Research in 2005. He shares his family life with Kathy Patterson and their daughters Phoebe and Ruby in Ottawa.



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