

**Craig Froehle, PhD**

## **Improving Care and Efficiency through Analytics: Automating Patient Triage in Radiology**

**Monday  
September 16, 2013  
4:30-6:30PM  
in 1123 LBME**



In many healthcare situations, waiting patients must be selected from a queue to receive or continue receiving service. When inconsistent criteria are used to order waiting patients within the queue, the result can be inadequate patient care, excessive patient waiting, unnecessary physician interruptions, and other symptoms of poor system performance. As part of a larger effort to build a workflow management system for radiology, we undertook an effort to develop an algorithm that could replicate in a normative fashion the mental heuristics that physicians use when determining who in a queue of waiting patients should receive their attention next. This research examines the process by which we developed and validated that approach towards automating the patient sorting task, which was recently awarded a US patent. One particular challenge was determining which radiologists' expertise and preferences should be used to influence the resulting algorithm. Also, using a multi-stage system measurement approach, we examine the effectiveness of the overall workflow management system, of which the triage algorithm was a key component, to reduce patient waiting times and improve overall operational effectiveness within the radiology department. This presentation will include both a discussion of the research processes involved in developing the triage algorithm and an empirical examination of the system's benefits when implemented in practice.

**Dr. Craig Froehle** is Associate Professor of Operations and Business Analytics at the Carl H. Lindner College of Business at the University of Cincinnati. He also holds faculty appointments in the UC College of Medicine, where he collaborates with the Department of Emergency Medicine, and in the James M. Anderson Center for Health Systems Excellence at Cincinnati Children's Hospital Medical Center. Dr. Froehle's research is focused on operations management in the healthcare industry, with specific attention to problems related to patient flow, scheduling, capacity management, and improving the patient experience. Dr. Froehle earned his BS in Mechanical Engineering and MBA in Operations Management at the University of Cincinnati. He then worked in the engineering industry and founded a dot-com startup before earning his PhD in Business (Operations Management) at the University of North Carolina at Chapel Hill and moving into academia. His award-winning, peer-reviewed research has been widely cited, patented, and commercially licensed. He serves on the editorial boards and as a reviewer for OM journals and the National Science Foundation.

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