Use your Mathematics Background to Solve Complex Problems in Business and Industry

Ph.D. Opportunities in Management Science at the Ivey Business School

A background in pure or applied mathematics, statistics or economics makes you ideally suited to pursue research in some of the most challenging and applicable areas of business. Some current examples of areas at the forefront of mathematical and statistics modelling include health care applications, online auctions, Big Data, supply chain and revenue management. Internet applications abound. As a cursory internet search will show you, it is an exciting time to explore complex yet practicable problems where mathematical applications are at the forefront. Graduates skilled in these topics are in high demand.

At the Ivey School of Business, we are interested in students who wish to become leaders in the application of mathematical modelling to business. In addition to modelling, you will be expected to take background courses in business and develop skills important to communicating results and leading others. The Ivey School is well known for developing leaders. Recently, Bloomberg Businessweek ranked Ivey as Number 1 Full-Time MBA program among non-US business schools. (http://www.businessweek.com/bschools/rankings/international).

Since 2000, our grads have taken faculty positions at several schools including Cornell University, Dalhousie University, Kennesaw State University, Lakehead University, St. Mary's University, Suffolk University, University of California - Santa Barbara, University of Ulsan, University of Western Ontario and University of Wyoming.

Our current students have a variety of academic backgrounds including mathematics, statistics, business, system management, and industrial engineering. Students who are admitted to our Program receive a competitive four-year funding package. International students also receive a PhD tuition grant that covers the difference between domestic and international tuition. The current minimum PhD funding package is $27,700 per year. This amount will increase significantly if students win an Ontario Graduate Scholarship, NSERC Fellowship, and other eligible scholarships. We also offer our students $2,000 in each of their first four years to present their research or serve as discussants at eligible conferences and an additional $3,000 to help defray expenses related to their thesis research. A master's degree is not required. Deadline for domestic and international students are January 15, 2015. For more information contact Hubert Pun, hpun@ivey.ca.

Current faculty and their research interests are as follows:

Mehmet A. Begen (Ph.D. University of British Columbia) is an industrial engineer and a management scientist with research interests in operations research (OR) applications, healthcare operations management, scheduling, simulation and data-driven approaches. Mehmet worked in management and analytics consulting before his Ph.D. studies and is a Certified Analytics Professional (CAP).

Peter C. Bell (Ph.D. University of Chicago) investigates ways that firms achieve a competitive advantage by using management science and advanced analytics and the benefits and costs of outsourcing and offshoring their analytics function. He also develops mathematical models of new and innovative revenue enhancing business practices including models that demonstrate the effectiveness of re-planning, fencing, and buyback policies.

Lauren Cipriano (Ph.D. Stanford University) develops models to evaluate technology adoption in stochastic systems, specifically in health policy and medicine. Her research interests also include methods for model calibration and value of information analysis. Recent work includes evaluating the effectiveness and cost effectiveness of newly developed treatments for hepatitis C and how those new treatments and opportunities for genetic testing influence hepatitis C screening policies in the US.

Fredrik Odegaard (Ph.D. University of British Columbia) studies revenue management and health care. His most recent work in revenue management involves modeling the dynamics of online auctions. His recent health care work involves two studies – one examining the value of investments in health on the productivity of an organization, and one examining quality of life among diabetes patients.

Hubert Pun (Ph.D. Indiana University) applies game theory to interesting problems in supply-chain management and healthcare operations management. Specifically, he is interested in the firm's outsourcing decision and the supply-chain partnerships between competitors.

John Wilson (Ph.D. Carnegie-Mellon University) is interested in applications of statistics and probability. Research interests include revenue management, auctions, modeling software errors, maintenance scheduling for stochastically failing machines and Bayesian approaches to reliability. Recent research has been on optimizing Name-Your-Own-Price-Auctions and ancillary pricing.

Xinghao Yan (Ph.D. Purdue University) studies information asymmetry, inventory sharing, supplier selection and quality competition in decentralized supply chains. He is also interested in healthcare operations management, with a focus on information asymmetry and optimization of hospital operations parameters.

Greg Zaric (Ph.D. Stanford University) is interested in health economics and operations research applied to health care. His recent work includes investigations of pharmaceutical risk sharing agreements, pharmaceutical co-development contracts and emergency department processes. He also has an extensive program of research on economic evaluations of new medical technologies focusing on HIV and oncology.