Clarkson Offering Online Master of Science in Supply Chain Management

Clarkson University’s supply chain management program is once again in the company of some of the most elite universities in the country. U.S. News & World Report’s 2020 rankings of the best colleges ranked Clarkson University in the top 125 institutions in the nation, with the supply chain management program ranking in the top 20 of such programs. It is the highest ranked program at Clarkson in the U.S. News rankings. Our undergraduate supply chain management program has been ranked among the top 20 in the nation for 16 years by U.S. News & World Report.

Recently, we announced a new specialized online Master of Science in Supply Chain Management. This interdisciplinary program is designed for professionals who strive to gain the advanced expertise needed to lead companies to world-class supply chain management status. It provides an integrated set of learning opportunities for those interested in becoming proficient in effectively managing complex supply chains.

This is the first online MS in supply chain management program offered in the state of New York that is designed for working professionals. As a key differentiator, the program will offer a synchronous component in each class, with heavy emphasis on personal interactions to enhance the learning experience. The synchronous component has proven to be the essential success factor of Clarkson’s highly ranked online MBA program. The supply chain management program consists of 30 credits, with an expected completion time of one year if taken full time and two to three years if taken part time. The first cohort is expected to start the program in June 2020.

As a private, national research university, Clarkson is a leader in technological education and sustainable economic development through teaching, scholarship, research and innovation. Clarkson alumni earn salaries that are among the top 2% in the nation and realize accelerated career growth. One in five already leads as a CEO, senior executive or owner of a company.

In this issue of Linkages, you will read about our faculty’s current research, including how IT-enabled innovation is affecting supply chain integration and how knowledge sharing is impacted by social factors (p. 2), as well as how research to optimize airplane boarding has caught the attention of national media (p. 3). You will also read about an alumnus who is making the most of his three Clarkson degrees to accelerate his supply chain management career (p. 6), and how university-industry partnerships are providing lessons in real-world problem-solving for our students (p. 8).

We hope you enjoy this issue and welcome your feedback (mahmoodi@clarkson.edu).
IT-Enabled Innovation

Knowledge Sharing and Decision Making in Technology and Supply Chain Integration

The pace of information and digital technology innovation is accelerating and transforming the way business is conducted. In every industry, companies are harnessing the power of data and using advanced analytics to improve communication and operations throughout organizations and along their supply chains. The result is more information sharing, improved efficiency and better decision making.

Companies that adopt and integrate IT-enabled innovations are driven by the need to stay competitive and improve their bottom lines. But while the bottom line is critical, it is not the only factor affecting a company’s decision about which information should be shared with suppliers and customers.

“When supply chain partners are considering digital supply chain integration, it is not just economic factors that they evaluate,” says Weiling Ke, professor of operations & information systems. “Their actions are also shaped by social factors: Do I trust you enough to share my information? How much should I share based on my level of trust?”

Professor Ke’s research focuses on the acceptance and management of IT-enabled innovations across different functions and platforms — from supply chain integration and interorganizational knowledge sharing to ERP implementation and open source communities.

In general, the more that proprietary and public information is shared, the better the supply chain is. But that only works if both organizations judge their relationship to be fair and just. If trust is low, then information is shared, the better the supply chain is.

“Do I trust you enough to share my information? How much should I share based on my level of trust?”

The role of knowledge sharing in decision making comes into play in other areas too. Recently, she looked at the issue of technology prototyping and user acceptance. “Today, when companies ask users to evaluate new technology, they only share what the customer will ultimately choose in the marketplace.”

The research formed the basis of an article coauthored by Prof. Ke that appeared in MIS Quarterly, a leading journal in information services. Her research has appeared in other top journals, including the Journal of Operations Management and the Journal of Management Information Systems. One indicator of the success of her research is her Google Scholar Citation score of 3,098.

In considering her professional status as a scholar, Prof. Ke points to the power of collaboration. “I value the work I do with my colleagues, especially those from Clarkson. Each researcher brings a particular expertise to the subject.”

She also works closely with collaborators in Singapore and China, where much of the data for her research is collected. For the past 17 years, Prof. Ke has traveled there each summer. While in China, she also spends time at companies, talking with their management teams and observing technology users. “I gain insight for my research and also learn what their concerns are and provide them with suggestions to better improve IT integration.”

These experiences with industry translate into real-world material for her students. She shares insights gained from her industry collaborations, as well as from her research, to help students better understand concepts and the latest issues related to IT integration.

Modern air travel is the safest and fastest way to travel. But it’s not without its headaches.

John Milne, Neil ’64 & Karen Bonke Associate Professor of Engineering & Management, has been working to improve the speed and efficiency of one of the most confounding challenges facing airlines and travelers: the airplane boarding process.

“My interest in this was born of my own frustration,” says Professor Milne. “Like most people, I find the process to be chaotic and stressful.”

In 2013, Prof. Milne read about a boarding sequence method developed by physicist Jason Steffen to reduce the time it takes to get passengers into seats. In Steffen’s method, passengers are assigned a specific numerical position in line that depends upon their ticketed seat location.

“I read Steffen’s research and thought he nailed it, except for one thing: the luggage issue,” Prof. Milne says. “A few people stowing carry-ons can block the aisle and grind the entire process to a halt.”

In 2014, Prof. Milne and student Alexander Kelly ’14 published an article in the Journal of Air Transport Management that outlined a method by which passengers are assigned specific seats based on the number of bags they are carrying so that luggage is evenly distributed throughout the plane. Computer simulations indicated that the total time to board all passengers on a fully loaded plane would be even shorter than that obtained with Steffen’s method.

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Two years later, Prof. Milne and Mostafa Salari (University of Calgary) improved on this model. Through mathematical modeling, they found that putting passengers with no carry-on luggage in the first few rows further decreased the boarding time. "This would benefit passengers, making their travel experience more comfortable," Prof. Milne says. "Theoretically, if you can increase the speed of boarding passengers, you can turn planes around faster and add more flights.""It is a system, she says, that makes her “a better scholar, a better teacher and a better citizen.”

Prof. John Milne
### Faculty Research, News and Awards

#### Associate Professor Santosh Mahapatra


#### Professor Weiling Ke


#### Associate Professor Dennis Yu

Coauthored the paper, “An Improved Car-Following Model With Consideration of Multiple Preceding and Following Vehicles in a Driver’s View,” in Physica A: Statistical Mechanics and its Applications. Professor Yu has been invited to serve as chair of the Marketing and Operations Management track for the Production and Operations Management Society’s 31st Annual Conference in April 2020.

#### Assistant Professor Zhalieh Semnani-Azad

Coauthored the book chapter, “How Culture and Race Shape Gender Dynamics in Negotiations,” published in the Research Handbook on Gender and Negotiation (Edward Edgar Publishing). Professor Semnani-Azad was also invited to present her research, “How Tight Social Norms Predict Trust in Biometric Technology: Comparison of U.S., India, Taiwan and Germany,” at the New York City headquarters of Facebook Inc. as part of Instagram’s Division for Industry and Research Collaboration. The research is funded by the National Science Foundation and the Department of Homeland Security.

#### Professor Farzad Mahmoodi


Professor Mahmoodi also received the 2019 Professor of the Year-MBA Module, awarded by selection of the MBA students.

#### Assistant Professor Golshan Madraki

Coauthored two articles: “An Efficient Simulation Optimization Methodology to Solve a Multi-Objective Problem in Unreliable Unbalanced Production Lines,” in Expert Systems with Applications; and “Recalculating the Length of the Longest Path in Perturbed Directed Acyclic Graph,” in IFAC-PapersOnLine.

Prof. Amir Mousavian

Is lead PI, with co-PIs Assistant Professor Golshan Madraki and Associate Professor Lei Wu (Stevens Institute of Technology), on the research project, “PICSA: Graph-Theoretic Cyberattack Propagation Modeling & Robust Prevention & Mitigation Approaches in Interconnected Power & Electric Transportation Systems.” The project received $300,000 in funding through the Clarkson Ignite Research Fellowship program.

The Right Fit
Jason Menard Launches a Promising Career With a Fortune 500 Manufacturer

A s a global senior sourcing analyst for Stanley Black & Decker (SBD), a purpose-driven Fortune 500 diversified industrial organization, manufacturer of professional and consumer tools and industrial fasteners, and provider of security products, Jason Menard ’14, MS’16, MBA’16 works with more than 50 manufacturing plants throughout the world.

Menard is employed in SBD’s Global Supply Management (GSM) group, where he leads the strategy for the long metals team, which is responsible for more than $200 million in raw material each year. “I oversee supplier-manager relationships, engage in negotiations for contract pricing and handle productivity projects in an effort to keep costs down and shorten lead time,” he says.

“It’s a job he loves at a place that feels like “the right fit.” I was drawn to the company because it is a large global company but has a small-company feel.” It’s also a company that makes room for innovation through employee initiatives. “I have an interest in blockchain and moving this technology into the company,” he says. “Last year, I presented some ideas to our senior management team. Now I am doing research in different units to see how it might be implemented and add value.”

Menard began his career with the New Britain, Conn.-based manufacturer four years ago when he joined the Stanley Leadership Program as a global supply chain analyst. “I was an MBA student at the time, working with Professor Farzad Mahmoodi on the Global Supply Chain Management Executive Seminar,” he says. “I met Mike Prado, who was vice president of GSM at SBD at that time. Later, I followed up with the company and applied for the two-year program.”

Menard says his interest in the field was first piqued when he was an undergraduate. “I came to Clarkson because of the engineering & management program,” he recalls. “I wasn’t really sure what I wanted to do, but I knew I wanted to learn both the technical and business side of things.”

At Clarkson, Menard took classes with Professor Farzad Mahmoodi and Associate Professor of Operations & Information Systems Dennis Yu. “They were definitely my favorite professors,” he says. Through his coursework and conversations with the two, Menard began to consider a career in supply chain management.

“Things change so fast in this field, and there are so many variables,” he says. “There is always a new challenge, a new puzzle to solve. That really appealed to me.”

To further develop his analytical skills and prepare for a career in a field that is constantly evolving, Menard remained at Clarkson for two more years, earning an MBA (with a concentration in supply chain and environmental management) and a Master of Science in Data Analytics.

“The skills he developed through his education in technology, management, data analytics and sustainability have already served him well. “With my background in data analytics, for example, I am able to ingest and visualize large amounts of data and communicate this information to a broad audience. This is very important in my work.”

Today, if you don’t have some understanding of how data is stored and analyzed, you will be left behind.”

With these skills and a natural openness to new ideas and game-changing technologies, Menard is well-positioned for success in today’s complex, volatile global economy.

43 Years of AACSB Accreditation

Receiving AACSB reaccreditation is not just a great privilege, it is also a big responsibility. AACSB accreditation requires that a school demonstrate innovation, impact and engagement, which are core aspects of continuous improvement in all of Clarkson’s programs. Reh School of Business faculty are actively publishing cutting-edge scholarship and research in high-impact journals that advance knowledge creation and application within and across business disciplines.

“At the Reh School, we strive to positively impact society through business education, scholarship and engagement,” says Interim Dean Augustine Lado, Richard ’55 and Joy Dorf Chair in Entrepreneurship and Innovation. “We are proud to have the quality and success of our programs recognized once again.”

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University-Industry Partnership
Students Partner With Amplex Corporation to Improve Supply Chain and Operations

Last fall, students in Assistant Professor Ha Hai Ta’s Strategic Sourcing class worked with Amplex Corporation to evaluate and provide data-driven recommendations to improve the company’s operations.

Amplex Corporation is a third-party logistics company, headquartered in Grand Prairie, Texas, that serves major retailers in the U.S. The students — all majoring in global supply chain management or engineering & management — applied their knowledge of operations, sourcing and supply chain management, including forecasting, capacity planning, supply analysis and sourcing options evaluation, to develop strategies to improve the company’s operations. They presented their final recommendations to the company’s COO and accountant.

“Amplex was very pleased with the contributions made by our students,” says Professor Ta. “Their hard work and efforts positively impacted the company.”

Prof. Ta’s goal is to continue to integrate hands-on, real-world learning opportunities like this into her students’ coursework. She is a strong believer in the value of university-industry partnerships. “Students form connections by working closely with company partners and have opportunities to apply supply chain management best practices and tools to provide recommendations and solutions for companies,” she says. “The companies, in turn, gain analytical and data-driven recommendations from our students.”

CLARKSON UNIVERSITY
Online MS in Supply Chain Management

Launching in June 2020

Clarkson’s online Master of Science in Supply Chain Management is designed to meet the need for well-trained professionals who plan and manage complex supply chain enterprises.

- New York’s first online MS in supply chain management.
- Designed for working professionals.
- Integrated learning opportunities, including synchronous learning components, in every class.
- Interaction with renowned faculty and industry experts.
- No residency requirements.