



5.1.2.1 Proposed Name

Operations & Supply Chain Analytics Research (OSCAR) Centre

5.1.2.2 Proposed Terms of Reference

1. Centre Mandate, Mission, and Objectives

Operations & Supply Chain Analytics Research (OSCAR) Centre is a proposed faculty centre at the Ted Rogers School of Management of Toronto Metropolitan University (TMU). It aims to conduct innovative research to assist businesses and their supply chains in improving their performance, quality, visibility, and information sharing and in helping them identify and mitigate existing risks. The OSCAR Centre employs and develops management tools and techniques, including data-driven optimization, data mining, simulation, and machine learning, to support businesses and their supply chains in decision-making. It also aims at developing new algorithms and software tools for operations and supply chain management using data analytics and optimization techniques.

The OSCAR Centre's mission is to

- Conducting innovative research and developing cutting-edge tools to enhance the performance, efficiency, and sustainability of operations and supply chains,
- Identifying and employing data analytics techniques such as machine learning and text mining along with simulation and optimization tools to assist businesses and their supply chains in improving their decision-making capabilities, reducing waste, mitigating risk, and enhancing overall performance,
- Partnering with industry, government, and other academic institutions to be at the forefront of research and innovation in operations and supply chain management while training the next generation of leaders in this critical and dynamic field.

2. Membership

The OSCAR Centre offers different membership types, each with its own eligibility criteria, rights, and responsibilities.

A. Membership Categories

The OSCAR has a founding member as the Director, four core members, and three other membership options, including *Associated*, *Affiliated*, and *Research members*. The founding Director is Dr. Hossein Zolfagharinia, a TRSM faculty member specializing in the field of Operations and Supply Chain Management and a deep understanding of optimization techniques and data analytics. Moreover, the Centre's core membership comprises four researchers: Dr. Mohammad Nikoofal and Dr. Xingwei (Nancy) Yang from TRSM, whose work revolves around operations and supply chain management, along with Dr. Saman Hassanzadeh Amin from the Industrial Engineering department, and Dr. Aida Haghighi from the School of Occupational Health and Safety. Other faculty members with relevant areas of expertise will be encouraged to join the OSCAR as *Associated* members. Dr. Zolfagharinia is currently leading a team of a post-doctoral research fellow, one Ph.D. student, and two Master's students who can assist him with the Centre's projects in the first year. Additionally, *Associated* members will have the opportunity to collaborate with the Director on defined research projects or work independently to secure other projects and form their research teams while taking into account the rights and obligations of membership.

B. Membership Eligibility

Associated Member: An *Associated* Member refers to an individual who satisfies one of the following three criteria: (a) they are a member of the Toronto Metropolitan Faculty Association or the TMU community, such as Adjunct or Associate Faculty, or the broader academic community, (b) they conduct research in



one or more specialized areas such as Logistics and Supply Chain Management, Operations Research, Data Analytics, Data-Driven Optimization, and Machine Learning, and (c) they teach one or more courses in Supply Chain Management, Data Analytics, and Operations Research. In addition to the above criteria, the *Associated* member must be a member of the Yeates School of Graduate Studies (YSGS) to be eligible to supervise graduate students independently.

Affiliated Member: An Affiliated Member refers to a person or group representing the public, private, or non-profit sectors with a noteworthy interest in and dedication to fulfilling OSCAR’s mission.

Research Member: Individuals who work with the Centre as post-doctoral research fellows, research associates, research assistants, or students may be granted membership as a *Research Member*. Furthermore, a student refers to someone currently enrolled in a degree program at TMU or another institution of higher education.

C. Membership Rights and Responsibilities

Rights: Every member is entitled to access shared resources such as administrative staff assigned to the Centre, research funding specifically designated for the Centre, and equipment owned by the Centre or made available to members by special arrangement. Additionally, members have the right to associate with the Centre to enhance their profiles.

Responsibilities: To comply with the Centre’s regulations, all members must acknowledge the OSCAR Centre in relevant publications such as research papers, industry reports, and industry cases. Additionally, associated and Associated members are expected to serve as mentors for student members and are required to attend management meetings.

D. Membership Term

While the Director has no fixed term and last indefinitely, Core members of the centre have a term limit of five years for their membership. At the conclusion of each term, they can request renewal by submitting a formal request to the Director. In addition, *Associated membership* is valid for three years and may be renewed upon expiry. *Affiliated membership* can be only maintained if the individual or corporate member fulfills their responsibilities and wishes to remain a member. *Researcher Membership* remains active until one year after their contract or graduation from the degree program enrolled in at TMU or any other higher educational institution. Any member can opt to terminate their membership by submitting a written request to the OSCAR Director. The decision to discontinue membership does not prevent them from rejoining the Centre in the future.

3. Administrative Structure

The OSCAR Centre is managed and led by the Director and an Advisory Board. The Director reports to the Dean of the Ted Rogers School of Management and assumes the responsibilities of the chair of the Centre Advisory Board. In addition, the Director takes a primary role in creating the Centre’s yearly budget and plan of action and being the primary representative of the Centre in negotiations related to funding, research agreements, and industry partnerships.

The Advisory Board, which serves as an advisory body, consists of a maximum of five individuals, including the Director. The Associate Dean of Research will act as a representative of the Ted Rogers School of Management’s Dean on the Advisory Board, while the remaining members are chosen by the Director from internal and external stakeholders with relevant research and industry expertise.



4. Closure

If the Director of the OSCAR Centre comes to a conclusion that the continuation of the Centre's activities is no longer feasible or desirable, the assets allocated to the Centre shall be relinquished to the Faculty (after the settlement of all outstanding debts).

5.1.2.3 Importance of SRC Activities

The OSCAR Centre aims to have a significant impact on the industry and society by

- Conducting innovative research and developing cutting-edge tools and techniques that improve the performance, efficiency, and sustainability of operations and supply chains,
- Utilizing data analytics, optimization, machine learning, simulation, and other advanced tools to help businesses and supply chains to improve their decision-making capabilities, reduce waste, mitigate risk, and enhance overall performance.
- Contributing to the broader society's sustainability goals by providing appropriate tools and application for practice to implement achieved results.

The Centre also values collaborations with industry, government, and academic organizations to stay at the forefront of research and innovation in operations and supply chain management. These partnerships allow the Centre to adapt to the constantly changing needs of society and industry. Additionally, the OSCAR Centre provides a supportive atmosphere for both TRSM and external students to come together and participate in research-related discussions. These gatherings are led by the Director and attended by Core or Associated members, creating an ideal setting for exchanging ideas and insights on various research topics. This collaborative setting encourages knowledge sharing, fosters teamwork, and enables participants to identify effective strategies for addressing challenges encountered throughout the research process. Finally, the Centre is committed to training the next generation of leaders in this critical and dynamic field, which ensures that its research will have a long-lasting impact.

Alignment of Centre with TMU's Academic Plan

The OSCAR Centre is in accordance with three of the five priorities outlined in TMU's Academic Plan.

Student Experience: TMU's Academic Plan has identified student experience as one of its top five priorities, with a focus on fostering excellence in learning and teaching, exceptional student programs and services, and a steadfast commitment to students' holistic well-being both inside and outside the classroom. The OSCAR Centre presents valuable opportunities for both undergraduate and graduate students to address real-world business challenges. Additionally, OSCAR's Director, Core, and Associated members can instruct a variety of courses, such as:

- GMS 528 Issues in Operations Management
- GMS 701 Purchasing and Supply Management I
- GMS 801 Purchasing and Supply Management II
- GMS 803 Principles of Transportation
- GMS 804 Studies in Global Supply Chain Management
- GMS 805 Manufacturing Management

This range of courses will equip a diverse group of students with the knowledge, skills, and abilities necessary to provide appropriate solutions to supply chain and operational issues in practice. Furthermore, these courses will serve as an academic pathway for developing the next cohort of Canadian "Supply Chain Analysts", "Logistics Managers", "Inventory Planners", "Transportation Planners", "Warehouse Operations Managers", "Customs Compliance Specialists", and "Demand Planners".

Scholarly, Research, and Creative Activity: One of the top priorities of TMU is to achieve excellence in scholarly, research, and creative (SRC) activities. It involves local, national, and international engagement



and cooperation to address societal needs and advance transformative knowledge. The research focus of OSCAR complements and builds upon the already strong research expertise and industry experience of TRSM faculty. OSCAR aims to collaborate with industry, government, and academic organizations to conduct innovative research and develop state-of-the-art tools and techniques to improve operations and supply chains' performance, efficiency, and sustainability. OSCAR also provides specialized training to graduate students in various data analytics techniques, including descriptive analytics, diagnostic analytics, predictive analytics, clustering, prescriptive analytics, text analytics, data-driven optimization, machine learning, and optimization techniques and enables them to apply them to various research streams such as:

- Supply chain and network design,
- Operations management,
- Supply chain coordination and collaboration,
- Logistics and transportation management,
- Operations and supply chain sustainability,
- Supply chain information management.

Innovation: It is a key focus of TMU, which prioritizes the cultivation of an innovative ecosystem characterized by risk-taking, critical and creative examination of subjects, and broad thinking to generate new ideas and solutions to problems. Within this context, the OSCAR Centre provides an innovative mechanism for making effective decisions in the face of real-world conditions. The Centre employs real-world data to analyze supply chain problems and identify optimal solutions while also taking into account associated risks and rewards. This approach generates new knowledge for businesses through internal and external data sources and enhances their overall performance across multiple dimensions of sustainability, including economic, societal, and environmental considerations.

Alignment of Centre with TMU's Strategic Research Plan

The OSCAR Centre's objectives are in line with TMU's Strategic Research plan, specifically focusing on two themes:

Work, Skills, Industry: Firstly, the Centre's research along with its academic and business partnerships, will create new career opportunities while offering knowledge and services to Canadian businesses to enhance their performance. Secondly, it supports Canadian industries and supply chains by developing tools and strategies that promote ethical, inclusive, and sustainable economic growth and productive employment.

Technology and Intelligent Systems: The OSCAR Centre utilizes advanced methodological approaches to analyze the existing supply chain issues. These approaches have the potential to lead to technological tools and intelligent systems that can assist Canadian companies and enterprises in enhancing their processes and operations to achieve optimal results.

Alignment of Centre with TRSM Research Priorities

One of TRSM's key research visions is to address sustainability and social responsibility needs in Canada and worldwide. To contribute to achieving this vision, the OSCAR Centre aims to increase the intensity and impact of SRC in three high-priority areas, which are:

Sustainability: The OSCAR Centre contributes to sustainability by using data analytics to provide insights into sustainable business practices, such as waste reduction and energy optimization. By analyzing supply



chain data, the Centre identifies areas where sustainability can be improved and develops models to measure the impact of sustainable practices on the business and the environment.

Management, Entrepreneurship & Competitiveness: The Centre focuses on providing insights into supply chain performance to contribute to research in management, entrepreneurship, and competitiveness. Using data analytics tools, OSCAR measures supply chain performance metrics and uses this information in conjunction with management techniques and tools to identify areas for improvement and optimize the supply chains to increase their competitiveness.

Teaching & Learning for the New Economy: The OSCAR Centre enriches teaching and learning for the new economy by providing students with hands-on experience in data analytics and supply chain management. Through working on case studies and conducting simulation analyses, students apply their analytics knowledge to real-world supply chain problems, preparing them for data analytics skills to thrive in the emerging job market where such skills are in high demand.

The Uniqueness of the Centre within TRSM and TMU

The primary objective of the OSCAR Centre is to add distinctive value to both TRSM and TMU in its entirety. With its establishment, the Centre will fill a crucial void in the academic landscape by being the first research facility of its kind dedicated exclusively to operations and supply chain analytics. While the TRSM boasts a rich array of research centres covering various disciplines, such as Business Development, Labor Management, Cybersecurity, Leadership, Entrepreneurship, and Technology Management, none focus on operations and supply chain management. Owing to the significance of the supply chain role in businesses, the OSCAR Centre will serve as an innovative addition, bridging the gap between theory and practice by focusing on operations management, supply chain optimization, and advanced analytic techniques. By concentrating expertise and resources in this specialized area, the OSCAR Centre will set itself apart as an invaluable resource for industry collaboration, academic advancement, and the practical application of cutting-edge analytics techniques to solve complex operations and supply chain challenges.

In addition to its distinctive presence within the TRSM, the OSCAR Centre will assume a pioneering role within the larger university community. A comprehensive assessment of existing research centres at TMU reveals a total of 38 centres across various categories, including University-based Centres and Institutes, the Faculty of Arts, the Creative School, the Faculty of Community Services, the Faculty of Engineering and Architectural Science, the Faculty of Science, and the TRSM (see *Appendix A*). As previously mentioned, the OSCAR Centre is a unique entity within the TRSM category. Among the different categories, the Faculty of Engineering and Architectural Science is the second most relevant, housing six research centres:

- Centre for Engineering Innovation & Entrepreneurship (CEIE),
- Centre for Urban Energy (CUE),
- Institute for Biomedical Engineering, Science and Technology (iBEST) with St. Michael's Hospital and Faculty of Science,
- Toronto Metropolitan University Aerospace Engineering Centre,
- Toronto Metropolitan University Institute for Aerospace Design and Innovation,
- Toronto Metropolitan University Institute for Infrastructure Innovation.

Notably, the OSCAR Centre distinguishes itself from existing centres regarding its objectives, scope, and applications, with its specific focus on operations and supply chain analytics. By avoiding overlap in these areas, the Centre offers a unique value proposition within the university's research landscape. Furthermore, the OSCAR Centre will catalyze collaboration, fostering cross-disciplinary research and knowledge exchange within the university and among external stakeholders such as industry partners, government agencies, and other academic institutions. Through its dedicated platform for advanced research, training,



and consulting services in operations and supply chain analytics, the OSCAR Centre will elevate the reputation of TMU as a leading institution in the supply chain field.

5.1.2.4 Distinguishing Features of the Proposed Centre

The OSCAR Centre focuses on identifying the primary issues in the operations and supply chain management businesses face. As stated earlier, the main areas of consideration encompass network design, operations management, supply chain information management, supply chain coordination and collaboration, and logistics management. A variety of data analytics and optimization techniques are employed to investigate the existing challenges and generate effective solutions and practical insights. Some of these techniques include data mining, descriptive analytics, diagnostic analytics, predictive analytics such as machine learning, clustering, prescriptive analytics, text analytics, simulation, and data-driven optimization. Considering the Centre’s mission and objectives, utilizing the aforementioned techniques results in the following distinct features for the OSCAR Centre (Fig 1).

Interdisciplinary Approach: The Centre employs a multidisciplinary approach by adopting and integrating the methods and techniques from management science (e.g., optimization and simulation) and other closely related disciplines, such as statistics and computer science (e.g., data mining and machine learning), to address complex supply chain challenges.

Innovative Research: OSCAR is committed to conducting innovative research that pushes the boundaries of knowledge in the field of operations and supply chain management. The Centre’s research output includes cutting-edge tools and techniques that enhance operations and supply chain performance, efficiency, and sustainability.

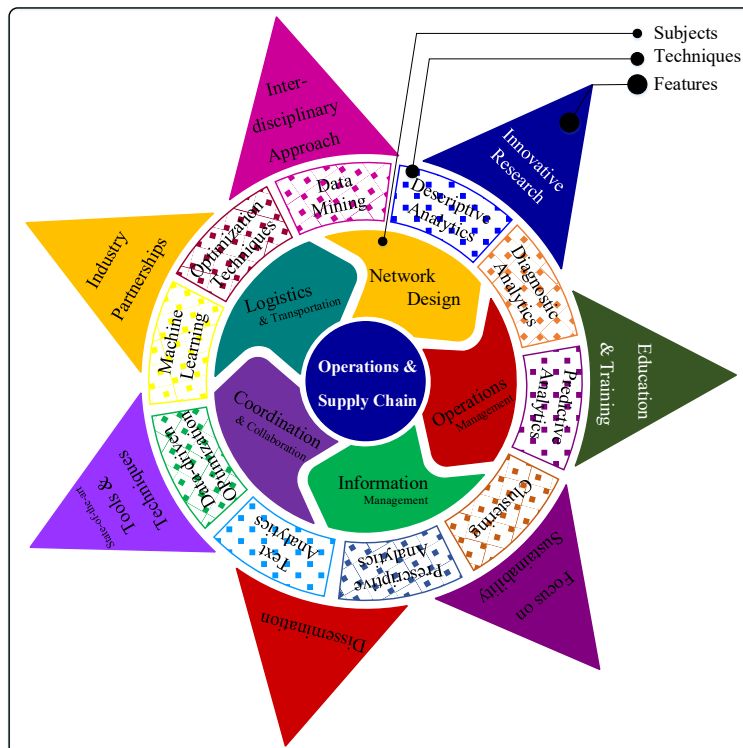


Fig. 1. OSCAR Centre components concerning area, techniques, and features



Industry Partnerships: The Centre collaborates with industry, government, and other academic institutions to ensure its research outputs remain relevant to real-world challenges. These partnerships also provide opportunities for the Centre’s students to gain practical experience and exposure to industry best practices.

Education and Training: Training the next generation of operations and supply chain management leaders is another OSCAR feature. The Centre provides education and training opportunities to students, researchers, and industry professionals through seminars, workshops, and other learning activities.

Sustainability Focus: OSCAR’s research and activities are focused on sustainability, addressing issues related to reducing waste, mitigating risk, and enhancing overall supply chain performance. The Centre’s research output includes tools and techniques to help businesses and their supply chains become more sustainable and socially responsible.

State-of-the-art Tools and Techniques: The Centre employs state-of-the-art tools and techniques for data collection, analysis, modeling, simulation, and optimization. These tools and techniques are used to generate managerial insights and inform decision-making in operations and supply chain management.

Dissemination: OSCAR hosts dissemination workshops and training seminars to share its research findings and knowledge with a broader community. The Centre’s dissemination activities help to bridge the gap between academia and industry and to promote best practices in operations and supply chain management.

5.1.2.5 Anticipated Impacts on Faculty/University

The OSCAR will require assistance from the HR of the university in order to carry out tasks such as recruitment, payroll, and overseeing research and operational funds. Additionally, the Centre’s spatial needs will necessitate Facilities Management and Development (FMD) services. Lastly, if there is a need to acquire capital equipment, it may be necessary to involve the University Procurement Department.

5.1.2.6 Proposed Scope of Activities, Outputs, Evaluation Metrics

The OSCAR’s primary inputs, activities, outputs, outcomes, and metrics can be summarized as follows:

Inputs:

- Expertise in optimization and data analytics,
- Operations and supply chain data,
- Business, environmental, and social data,
- Technical skills such as programming, modeling, and software,
- Teaching experience,
- Budgets, including support from TMU and TRSM, funding agencies, and donations.

Activities:

- Data collection and analysis,
- Modeling, simulation, and optimization,
- Generating and implementing managerial insights,
- Collaborating with industries, government, and other universities
- Research supervision,
- Education and training,
- Hosting dissemination workshops and training seminars.

Outputs:

- Optimization models,
- Research seminars and publications,



- Software and dashboards,
- Decision support tools,
- Industry workshops and reports.

It is worth noting that while the OSCAR Centre aims to pursue all the above outputs, it emphasizes research seminars, publications, and the development of optimization models as its top priorities. Therefore, in the event that the anticipated budgets have not been entirely fulfilled, the Centre will prioritize allocating resources toward research seminars, publications, and the creation of optimization models. These activities require relatively lower budgets compared to the development of software, dashboards, or decision support tools. Furthermore, under such a circumstance, the Centre plans to prolong the interval between each workshop to three or four years, as opposed to the previous biennial frequency.

Outcomes:

- Increased competitiveness,
- Greater sustainability and resilience,
- Improved performance,
- Enhanced customer satisfaction,
- Increased business profitability,
- Workforce development,
- Higher visibility,
- Enhanced knowledge dissemination.

Evaluation Metrics:

- Research output,
- Usage, including citations and usage impact factor,
- Funding received,
- Number of collaborations with other centres, research institutions, or industry partners,
- Impact on society,
- The success of students in academic and industry careers.

5.1.2.7 Equity, Diversity, and Inclusion

The OSCAR aims to promote and advocate for Diversity, Equity, and Inclusion principles in general, as well as the TMU policies (available at <https://www.torontomu.ca/equity/>). It plans to establish a stakeholder engagement policy that encourages the participation and input of various communities with diverse backgrounds. The OSCAR Centre intends to collaborate with the Office of the Vice President of Equity and Community Inclusion at TMU to utilize its research expertise and technical resources in supporting research projects, intervention plans, and data analytics that address the needs of under-represented and at-risk communities at local, provincial, and national levels. The progress made by OSCAR in promoting Diversity, Equity, and Inclusion will be included in its annual reports.

5.1.2.8 Proposed Budget

Required - \$1.241 million from 2023 to 2028 to support:

- \$926,000 – research support, including undergraduate and graduate students (Masters, PhD), research associates, and post-doctoral research fellows.
- \$74,000 – expenses to attend conferences and workshops
- \$122,500 – practitioner engagement (*stakeholder roundtables, knowledge mobilization, hosting training workshops, technology demonstration seminar, etc.*)



Detailed information about the proposed budget is depicted in Table 1. The anticipated sources of funding will be:

- Seed funding from the Ted Rogers School of Management (\$10,000/year from 2023 to 2028)
- NSERC Discovery Grant (Target: \$250,000 from 2024 to 2028)
- SSHRC Insight Development and Insight Grants (Target: \$200,000)
- Industry Partnerships through NSERC Alliance Grants (Target: \$500,000)
- Industry Partnerships through Mitacs (Target: \$150,000)
- Direct Industry Partnerships (Target: \$200,000)
- Provincial Government (e.g., Ontario Centre Of Innovation, Target: \$100,000)
- Federal Government (e.g., Federal Economic Development Agency for Southern Ontario, Target: \$100,000)

Currently, the Director has successfully obtained four notable research grants. These include \$30,000 from NSERC Discovery, \$58,800 from SSHRC Insight, \$68,000 as a Principal Investigator (PI), and \$58,400 as a Co-PI from SSHRC Insight Development. Furthermore, there is a plan to submit an application for the renewal of the NSERC Discovery grant this year, with an anticipated total amount of \$250,000 as a Principal Investigator.

Table-1. Details about the required budget from 2023-2028

# Cost	Unit Cost	Costs in Years (<i>Thousands</i>)					Total Cost
		2024	2025	2026	2027	2028	
Research		114	166	178	228	240	926
1 Post-Doctoral Research Fellows	50	50 (1)*	50 (1)	50 (1)	50 (1)	50 (1)	250
2 PhD Student	20	20 (1)	40 (2)	40 (2)	40 (2)	40 (2)	180
3 Master Student	16	32 (2)	64 (4)	64 (4)	64 (4)	64 (4)	288
4 Undergraduate Research Support	12	12 (1)	12 (1)	24 (2)	24 (2)	24 (2)	96
5 Staff	50	-	-	-	50 (1)	50 (1)	100
6 Research Associate	12	-	-	-	-	12 (1)	12
Travel and Conference							
7 Annual Conferences/Workshops	2	10	16	16	16	16	74
Engagement		32.5	12.5	32.5	12.5	32.5	122.5
8 Stakeholder Roundtables	2.5	2.5	2.5	2.5	2.5	2.5	12.5
9 Knowledge Mobilization	5	5	5	5	5	5	25
10 Hosting Conferences/Workshops	20	20	-	20	-	20	60
11 Technology Demonstration Seminars	5	5	5	5	5	5	25
Total Cost		156.5	194.5	226.5	256.5	288.5	1,122.5
Cumulative Total Cost		156.5	351	577.5	834	1122.5	

* Number of personnel

5.1.2.9 Physical Requirements

Current Staffing

The Director is now supervising a PhD student and post-doctoral researcher, and two Master’s students. The plan is to hire an undergraduate research assistant in the first year.



Staffing Estimate

The estimated number of students and staff for the next five years is summarized as follows (also shown in Table 1):

- 2024: 5,
- 2025: 8,
- 2026: 9,
- 2027: 10,
- 2028: 11.

Space Type Requirement

The OSCAR Centre's Director currently occupies a pair of desks on the 4th floor of the 1 Dundas building. His post-doctoral researcher and PhD student will utilize these desks as their workspace until 2023-2024. While these desks suffice for the Centre's needs during its initial year of operation, permanent office desks are necessary for PhD students, post-doctoral researchers, administrative staff, and research associates. To optimize the space, the plan is to implement a desk-sharing arrangement where research team members attend in person on different days of the week.

- 2024-2025: 2 office desks
- 2025-2028: 3 office desks

Please note that the undergraduate students will be using bookable study rooms, and Master's students can use a dedicated study area for graduate students, which is available on the 7th floor of the Student Learning Centre (SLC). In addition, graduate students have access to breakout rooms designated for graduate students on the 9th floor of the TRS building and a Study lounge.

5.1.2.10 Proposed Members

The **Director** of the Centre is **Dr. Hossein Zolfagharinia**, an Associate Professor in the Global Management Studies department at the Ted Rogers School of Management, Toronto Metropolitan University. He received his Undergraduate and Master's Degrees in Industrial Engineering. Afterward, he earned his Ph.D. in Operations and Supply Chain Management from the Lazaridis School of Business and Economics at Wilfrid Laurier University. He has research experience in (i) Supply Chain Management, (ii) Operations Management, and (iii) Transportation and Logistics Management. He is the co-editor of a book and the author of a book chapter and over 20 top-tier refereed articles in A and A* rated journals, based on the ABDC list. For more information, please see Dr. Zolfagharinia's CV attached.

As mentioned earlier, the **four Core members** are Dr. Mohammad Nikoofal and Dr. Xingwei (Nancy) Yang from the Ted Rogers School of Management, and Dr. Saman Hassanzadeh Amin from the Industrial Engineering department. A brief bio of each Core member is provided below. Please refer to the attached CVs for more details.

Dr. Mohammad Nikoofal is an Associate Professor in the Global Management Studies department at the Ted Rogers School of Management, Toronto Metropolitan University. He received his undergraduate and master's degrees in Industrial Engineering and earned his Ph.D. in Operations Management, with a minor in Economics, from the Desautels Faculty of Management at McGill University. His research focuses on the application of game theory, mechanism design, and the theory of incentives in the context of supply chain risk management and public-private partnerships in securing supply chains and e-commerce channels. His research has been published in top journals in the field of operations management, including Management Science, Manufacturing and Service Operations Management, and Production and Operations Management.



Dr. Xingwei (Nancy) Yang is an Assistant Professor of the Information Technology Management department at Ted Rogers School of Management at Toronto Metropolitan University. Dr. Yang received her Ph.D. in Management Analytics from the Smith School of Business at Queen's University. She holds a B.Sc. in Mathematics from UBC. Dr. Yang's research revolves around leveraging advanced Analytics and Machine Learning techniques to address challenges in various domains. Her research has been published in reputable publications such as Decision Support Systems, the International Journal of Information Management, and the Journal of Service Research. Throughout her career, Dr. Yang has gained practical experience working with organizations, including Scotiabank, Scotiabank Centre for Customer Analytics, Loblaws, TD Canada Trust, and PwC.

Dr. Saman Hassanzadeh Amin is an Associate Professor at the Department of Mechanical and Industrial Engineering at Toronto Metropolitan University (TMU). Prior to joining TMU, he was an Assistant Professor of Supply Chain Management at Cape Breton University. Dr. Amin's research expertise spans disciplines and includes Supply Chain Management, Operations Management, Operations Research, Optimization, Information Technology, and Decision Support Systems. He has published more than 49 articles in well-known journals.

Dr. Aida Haghighi is an Assistant Professor within the School of Occupational and Public Health, situated in the Faculty of Community Services at Toronto Metropolitan University. She holds both bachelor's and master's degrees in Industrial Engineering. She has attained a PhD in Industrial Engineering, with a specialized concentration in Occupational Health and Safety (OHS), from Polytechnique Montréal, affiliated with the Université de Montréal. Her academic contributions include top-tier refereed articles published in reputable journals in the field of OHS, such as Safety Science. She has worked on and is currently involved in research projects related to the enhancement of OHS within logistics systems and supply chains. For example, her work includes investigating risk factors related to slips, trips, and falls among truck drivers in the transportation sector, as well as examining incentives for bypassing machinery safeguards and strategies for preventing such bypassing in the manufacturing sector. In addition to her academic credentials, Dr. Haghighi holds almost a decade of industry experience in the energy sector. There, she began as a senior systems analysis specialist and progressively advanced to the position of head of the Systems Analysis Department. Throughout this professional trajectory, she contributed to the implementation, auditing, and maintenance of integrated management systems, encompassing OHS, Quality, and Environmental management systems.



APPENDIX A. The List of Research Centres at TMU

- **University-based Centres and Institutes**
 - City Building TMU,
 - Toronto Metropolitan Centre for Immigration and Settlement (TMCIS).

- **Faculty of Arts**
 - Centre for Digital Humanities (CDH),
 - Centre for Policy Innovation and Public Engagement,
 - HOPE Centre for Sexual and Gender Minority People,
 - Middle East and North Africa (MENA) Studies Centre,
 - Modern Literature and Culture Research Centre (MLC).

- **The Creative School**
 - Centre for Communicating Knowledge (CCK),
 - The Centre for Fashion & Systemic Change,
 - Centre for Free Expression,
 - Documentary Media Research Centre (DMRC).

- **Faculty of Community Services**
 - Centre for Global Health and Health Equity
 - Centre for Studies in Food Security,
 - Centre for Urban Research and Land Development (CUR).

- **Faculty of Engineering and Architectural Science**
 - Centre for Engineering Innovation & Entrepreneurship (CEIE),
 - Centre for Urban Energy (CUE),
 - Institute for Biomedical Engineering, Science and Technology (iBEST) with St. Michael's Hospital and Faculty of Science,
 - Toronto Metropolitan University Aerospace Engineering Centre,
 - Toronto Metropolitan University Institute for Aerospace Design and Innovation,
 - Toronto Metropolitan University Institute for Infrastructure Innovation.

- **Faculty of Science**
 - Institute for Biomedical Engineering, Science and Technology (iBEST) with St. Michael's Hospital and Faculty of Engineering and Architectural Science,
 - Urban Water TMU.



▪ **Ted Rogers School of Management**

- Canada-China Institute for Business & Development (CCIBD),
- Centre for Labour Management Relations (CLMR),
- Cybersecurity Research Lab,
- Digital Enterprise Analytics and Leadership (DEAL),
- Diversity Institute (DI),
- Entrepreneurship Research Institute (ERI),
- Future of Sport Lab (external link, opens in new window)
- Inclusive Media and Design Centre (IMDC),
- Institute for Hospitality and Tourism Research,
- Institute for Innovation and Technology Management (IITM),
- Institute for the Study of Corporate Social Responsibility,
- National Institute on Ageing,
- Social Media Lab,
- Ted Rogers Leadership Centre,
- Urban Analytics Institute,
- The Retail Leadership Institute.