

Raf Jans

Professor of Operations Management
Chair in Supply Chain Operations Planning
HEC Montréal
3000, chemin de la Côte-Sainte-Catherine
Montréal (Québec) Canada H3T 2A7
Tel.: +1 514 340 7256
Email: raf.jans@hec.ca

Positions: **HEC Montréal, Canada**
Chair in Supply Chain Operations Planning, January 2019 - present
Professor of Operations Management, June 2014 - present
Associate Professor of Operations Management, July 2008 – May 2014

Erasmus University, Rotterdam School of Management, The Netherlands
Associate Professor of Operations Management, January 2008 – June 2008
Assistant Professor of Operations Management, October 2003 – December 2007
Post-Doctoral Research Fellow, October 2002 – October 2003

McGill University, Desautels Faculty of Management, Montreal, Canada
Visiting Assistant Professor, Management Science Department, September 2006 – June 2007

Education: **Katholieke Universiteit Leuven, Belgium**
Ph.D., Department of Applied Economics, Specialization: Operations Research, September 1997 - September 2002
Dissertation: “Capacitated Lot Sizing Problems: New Applications, Formulations and Algorithms”
Advisor: Prof. Z. Degraeve, London Business School

London Business School, UK
Visiting PhD student, Decision Sciences Group, September 2000- September 2002

Katholieke Universiteit Leuven, Belgium
Degree in ‘Business Engineering’ (‘Handelsingenieur’), Department of Applied Economics, 1992-1997

Research Interests: Supply chain management, production and distribution planning, lot sizing
Operations Research: optimization, linear and integer programming, exact algorithms and heuristics.
Applications of Operations Research to industrial problems, mainly in the area of Operations Management and Supply Chain Management.

Teaching Interests: Operations Management: production and inventory planning, process analysis, product variety, SCM
Operations Research: LP and IP, combinatorial optimisation, computer modelling.
Decision and Risk Analysis: decision trees, Monte Carlo and Discrete Event Simulation.

Papers: **Articles in international scientific journals:**

1. Gruson, M., Bazrafshan, M., Cordeau, J.-F., Jans, R., 2019. A Comparison of Formulations for a Three-level Lot Sizing and Replenishment Problem with a Distribution Structure, *Computers & Operations Research*, 111, 297-310.
2. Fabio Neves-Moreira, Bernardo Almada-Lobo, Jean-François Cordeau, Luis Guimaraes, Raf Jans, 2019. Solving a large multi-product production routing problem with delivery time windows, *Omega*, 86, 154-172.
3. Chitsaz, M., Cordeau J.-F., Jans, R., 2019. A Unified Decomposition Metaheuristic for Assembly, Production and Inventory Routing, *INFORMS Journal on Computing*, 31 (1), 134-142.

4. Karim Pérez Martinez, Yossiri Adulyasak, Raf Jans, Reinaldo Morabito, Eli Angela Vitor Toso, 2019. An exact optimization approach for an integrated process configuration, lot-sizing and scheduling problem, *Computers & Operations Research*, 103, 310-323.
5. Taş, D., Gendreau, M., Jabali, O., Jans, R., 2019. A Capacitated Lot Sizing Problem with Stochastic Setup Times and Overtime, *European Journal of Operational Research*, 273 (1), 146-159.
6. Melega, G.M., de Araujo, S.A., Jans, R., 2018. Classification and Literature Review of Integrated Lot-Sizing and Cutting Stock Problems, *European Journal of Operational Research*, 271 (1), 1-19.
7. Diego Fiorotto, Silvio de Araujo, Raf Jans, 2018. Process Flexibility and the Chaining Principle in Lot Sizing Problems, *International Journal of Production Economics*, 204, 244-263.
8. Miranda, P., Cordeau, J.-F., Ferreira, D., Jans, R., Morabito, R., 2018. A decomposition heuristic for a rich production routing problem, *Computers & Operations Research*, 98, 211-230.
9. Vo-Thanh, N., Jans, R., Schoen, E.D., Goos, P., 2018. Symmetry Breaking in Mixed Integer Linear Programming Formulations for Blocking Two-level Orthogonal Experimental Designs, *Computers & Operations Research*, 97, 96-110.
10. Gruson, M., Cordeau, J.-F., Jans, R., 2018. The impact of service level constraints in deterministic lot sizing with backlogging *Omega*, 79, 91-103.
11. Wu, T., Akartunali, K., Jans, R., Liang, Z., 2017. Progressive Selection Method for the Coupled Cutting-Stock and Lot-Sizing Problem, *INFORMS Journal on Computing*, 29 (3), 523-543.
12. Fiorotto, D., Jans, R., de Araujo, S., 2017. An analysis of formulations for the lot sizing problem with setup crossover, *Computers & Industrial Engineering*, 106, 338-350.
13. Melega, G.M., de Araujo, S., Jans, R., 2016. Comparison of MIP models for the integrated lot-sizing and one-dimensional cutting stock problem, *Pesquisa Operacional*, 36 (1), 167-196.
14. Fiorotto, D., de Araujo, S., Jans, R., 2015. Hybrid methods for lot sizing on parallel machines, *Computers & Operations Research*, 63, 136-148.
15. de Araujo, S., De Reyck, B., Degraeve, Z., Fragkos, I., Jans, R., 2015. Period Decomposition for the Capacity Constrained Lot Sizing Problem with Setup Times, *INFORMS Journal on Computing*, 27 (3), 431-448.
16. Adulyasak, Y., Cordeau, J.-F., Jans, R. 2015. Benders Decomposition for Production Routing under Demand Uncertainty, *Operations Research*, 63 (4), 851-867.
17. Adulyasak, Y., Cordeau, J.-F., Jans, R. 2015. The Production Routing Problem: A Review of Formulations and Solution Algorithms, *Computers & Operations Research*, 55, 141-152.
18. Retel Helmrich, M., Jans, R., van den Heuvel, W., Wagelmans, A., 2015, Economic Lot Sizing with an emission capacity constraint, *European Journal of Operational Research*, 241 (1), 50-62.
19. Adulyasak, Y., Cordeau, J.-F., Jans, R. 2014. Formulations and Branch-and-Cut algorithms for Multi-Vehicle Production and Inventory Routing Problems, *INFORMS Journal on Computing*, 26 (1), 103-120.
20. Adulyasak, Y., Cordeau, J.F., Jans, R., 2014, Optimization Based Adaptive Large Neighborhood Search for the Production Routing Problem, *Transportation Science*, 48 (1), 20-45.
21. Retel-Helmrich, M., Jans, R., van den Heuvel, W., Wagelmans, A., 2014, Economic Lot Sizing with remanufacturing: complexity and efficient reformulations, *IIE Transactions*, 46 (1), 67-86.
22. Jans, R., Desrosiers, J., 2013. Efficient Symmetry-Breaking Formulations for the Job Grouping Problem, *Computers & Operations Research*, 40 (4), 1132-1142.
23. Guner Goren, H., Tunali, S., Jans, R., 2012, A hybrid approach for the capacitated lot sizing problem with setup carry-over, *International Journal of Production Research*, 50 (6), 1582-1597.
24. Jans, R., 2010, Classification of Dantzig-Wolfe Reformulations for Binary Mixed Integer Programming Problems, *European Journal of Operational Research*, 204, 251-254.
25. Guner Goren, H., Tunali, S., Jans, R., 2010. A Review of Applications of Genetic Algorithms in Lotsizing, *Journal of Intelligent Manufacturing*, 21, 575-590.
26. Jans, R., 2009, Solving Lotsizing Problems on Parallel Identical Machines Using Symmetry Breaking Constraints, *INFORMS Journal on Computing* Vol. 21 (1), 123-136.
27. Jans, R., Degraeve, Z., 2008. Modeling Industrial Lot Sizing Problems: A Review, *International Journal of Production Research*, Vol. 46 (6), 1619-1643.
28. Jans, R., Degraeve, Z., Schepens, L., 2008. Analysis of an Industrial Component Commonality Problem, *European Journal of Operational Research*, 186, 801-811.
29. Jans, R., Degraeve, Z., 2008. Analysis of a symmetrical Set Covering problem: The lottery problem, *European Journal of Operational Research*, 186, 104-110.

30. Degraeve, Z., Jans, R., 2007. A New Dantzig-Wolfe Reformulation and Branch-and-Price Algorithm for the Capacitated Lot Sizing Problem with Set Up Times, *Operations Research*, Vol. 55 (5), 909-920.
31. Jans, R., Degraeve, Z., 2007. Meta-heuristics for lot sizing problems: review and comparison of solution approaches, *European Journal of Operational Research*, Vol. 177, 1855-1875.
32. Jans, R., Degraeve, Z., 2004. Improved Lower Bounds for Capacitated Lot Sizing Problems with Set Up Times. *Operations Research Letters*, Vol. 32, 185-195.
33. Jans, R., Degraeve, Z., 2004. An Industrial Extension of the Discrete Lot Sizing and Scheduling Problem. *IIE Transactions*, Vol. 36 (1), 47-58.
34. Degraeve, Z., Gochet, W., Jans, R., 2002. Alternative Formulations for a Layout Problem in the Fashion Industry. *European Journal of Operational Research*, Vol. 143, 80-93.

Chapters in books:

35. Jans, R., Dittrich, K., 2008, A review of case studies in business research, book chapter in *Case Study Methodology in Business Research*, J. Dul and T. Hak (Eds.), Butterworth Heinemann, 19-29.
36. Edens, B., Leeman, D., van Nuenen, J., Van den Ende, J., Jans, R., 2006. Liquid Gold: Innovation on a European Scale, book chapter in *Teaching entrepreneurship: Selected cases*, Clarysse, B., Roure, J., San Jose, A. (Eds.), Gate2Growth Academic Network, Brussels, 157-178.
37. Huisman, D., Jans, R., Peeters, M., Wagelmans, A., 2005. Combining Column Generation and Lagrangian Relaxation, book chapter in *Column Generation*, G. Desaulniers, J. Desrosiers, M. Solomon (Eds.), Springer, 247-270.

Submitted:

38. Ioannis Fragkos, Jean-François Cordeau, Raf Jans, 2017. The multi-period multi-commodity network design problem, *Cahier du CIRRELT* 2017-63.
39. Chitsaz, M., Cordeau J.-F., Jans, R., 2018. A Branch-and-Cut Algorithm for an Assembly Routing Problem, *Cahier du GERAD G*-2018-49.
40. Alvarez, A., Cordeau, J.-F., Jans, R., Munari, P., Morabito, R., 2018. Formulations, branch-and-cut and a hybrid heuristic algorithm for an inventory routing problem with perishable products, *Cahier du CIRRELT* 2018-42.
41. Gruson, M., Cordeau, J.-F., Jans, R., 2019. Benders decomposition for a stochastic three-level lot sizing and replenishment problem with a distribution structure, *Cahier du GERAD G*-2019-51.

Working papers:

42. Desrosiers, J., Jans, R., Adulyasak, Y. 2013. Improved Column Generation Algorithms for the Job Grouping Problem, *Cahiers du GERAD G*-2013-26.
43. Ruokokoski, M., Solyali, O., Cordeau, J.-F., Jans, R., Süral, H., 2010, Efficient formulations and a branch-and-cut algorithm for a production-routing problem, *Cahiers du GERAD G*-2010-66.
44. Jans, R., Desrosiers, J., 2010. Binary clustering problems: symmetric, asymmetric and decomposition formulations; *Cahiers du GERAD G*-2010-44.

Grants & Awards:

- NSERC Discovery Grant, Optimization Models and Algorithms for complex production planning problems, April 2019 – March 2024.
- NSERC Discovery Accelerator Supplement, Optimization Models and Algorithms for complex production planning problems, April 2019 – March 2022.
- Chair in Supply Chain Operations Planning, January 2019 – December 2023.
- HEC Professorship in ‘Operations Planning’, June 2018 – December 2018.
- CRIAQ, Programme Aero-Connect, with J. Roy et G. Doré, ‘Integration of 3D printing in the Canadian aerospace value chain’, January 2016-May 2016.
- NSERC Engage Grant, with J. Roy and G. Doré, ‘Integration of 3D printing in the Canadian aerospace value chain’, January 2016-June 2016.
- HEC Professorship in ‘Operations Planning’, June 2015 – May 2018.
- Prix Chenelière Éducation/Gaëtan Morin, November 2014, awarded to an associate professor at HEC Montréal for research in the past three years.
- NSERC Individual Discovery Grant (Natural Sciences and Engineering Research Council of Canada): ‘Optimization Models and Algorithms for Integrated Production Planning Problems’; 2014-2019.

Pôle E3 (HEC Montréal) grant, April 2014, with J.-F. Cordeau and O. Jabali, ‘Improving the carbon footprint of distribution networks: the case of Suncor Mississauga lubricants refinery’.

FQRNT Team Grant, April 2013 with J-F Cordeau (principal researcher) and G. Laporte, ‘Méthodes d’optimisation appliquées à la planification intégrée de la chaîne d’approvisionnement’ (Optimization methods for integrated supply chain planning), 2013-2016.

Shastri Partnership Development Seed Grant, September 2012, with Rupesh Pati

HEC Professorship in ‘Operations Planning’, June 2012 – May 2015

NSERC Individual Discovery Grant (Natural Sciences and Engineering Research Council of Canada): ‘Models and Algorithms for Integrated Production Planning Problems’; 2009-2014.

HEC Start Up Grant 2008-2009.

High Performing Research Member: Erasmus Research Institute of Management, The Netherlands (April 2008 – June 2008)

PhD grant (January 2007 – January 2011) in the NWO (Dutch Science Foundation) Open Competition Programme on the project: “Production planning and scheduling problems with demand substitution and remanufacturing” The main supervisor is Prof. Albert Wagelmans (Faculty of Economics, Erasmus University). Co-supervisors are dr. W. van den Heuvel and myself.

Grant from the Gate-2-Growth Academic Network, sponsored by the European Commission to develop the case: *Liquid Gold Case: Innovation on a European scale at Unilever*; 2005, with J. van den Ende.

Post doctoral research fellowship of ERIM (Erasmus Research Institute of Management) in the Logistics group (October 2002 – October 2003).

PhD Scholarship: Research Assistant of the Flemish Fund for Scientific Research (October 1998- October 2002). This scholarship is awarded each year to a small number of Ph.D. students in the field of business and economics, based on their academic record.

Memberships:

Member of the Scientific Committee of GERAD, August 2019 – now.

Editorial board, Pesquisa Operacional, 2018- now.

Board Member of the EURO Working Group on Lot Sizing, since 2014.

Member of CIRRELT (Centre Interuniversitaire de Recherche sur les Réseaux d’Entreprise, la Logistique et le Transport), since July 2013.

Member of CORS, since 2012.

Member of GERAD (Groupe d’études et de recherché en analyse des décisions), since April 2009.

Member of INFORMS, since 1999.

Supervision

Supervision of Post-Doctoral Students:

1. Gislaine Melega, HEC Montréal and CIRRELT, August 1 2019 – May 31 2020, ‘Integrated Cutting Stock and Lot Sizing Problems’, co-supervised with Reinaldo Morabito and Silvio de Araujo.
2. Karim Perez, HEC Montréal and GERAD, June 2018 – June 2020, “Logic based Benders for planning problems”, co-supervised with Yossiri Adulyasak.
3. Diego Fiorotto, HEC Montréal and CIRRELT, April 1 2016 – March 31 2017, “Flexibility in lot sizing”, co-supervised with Silvio de Araujo.
4. Ioannis Fragkos, HEC Montréal and CIRRELT, March 2015 – August 2015, «Multi-period Fixed Charge Network Design», co-supervised with Jean-François Cordeau.
5. Duygu Tas, HEC Montréal and CIRRELT, October 2014 – July 2015, “Lotsizing with stochastic setup times”, co-supervised with Ola Jabali and Michel Gendreau.
6. Rami Afif As’Ad, HEC Montréal and CIRRELT, February 2010 – July 2011, “Multi-level lotsizing and distribution problems”, Co-supervised with JF Cordeau.

Supervision of PhD Students:

1. Qihua Zhong, HEC Montréal, September 2019 – now, co-supervised with Y. Adulyasak and M. Cousineau.
2. Mehdi Ghaniabadi, HEC Montréal, January 2019 – now, co-supervised with Y. Adulyasak.

3. Matthieu Gruson, HEC Montréal, January 2016 – now, “Multi-level production and distribution planning”, co-supervised with J.-F. Cordeau.
4. Narges Sereshti, HEC Montréal, January 2016 – now, “Stochastic lot sizing problems”, co-supervised with Y. Adulyasak.
5. Masoud Chitsaz, HEC Montréal, September 2014 – now, “Inbound and outbound production routing”, co-supervised with J.-F. Cordeau.
6. Mathijn Retel Helmrich, Faculty of Economics, Erasmus University, The Netherlands, January 2006 – October 2013, “Green Lotsizing” The main supervisor is Prof. Albert Wagelmans and co-supervisor W. van den Heuvel.
7. Yossiri Adulyasak, HEC Montréal, September 2009 –December 2012, “Models and solution algorithms for production routing problems” Co-supervised with J.-F. Cordeau.

Supervision of Visiting PhD and MSc Students and Researchers:

1. Aldair Alvarez Diaz (visiting researcher at HEC Montréal CIRRELT, September 2019 – November 2019), Co-supervised with J.F. Cordeau; Hybrid methods for inventory routing problems, PhD student at Production Engineering Department, Federal University of Sao Carlos, Brazil, main advisors: Prof. R. Morabito and Prof. P. Munari.
2. Konstantin Klein (visiting researcher at HEC Montréal and CIRRELT, April 2019 – September 2019), Stochastic lot sizing and transportation capacity selection, MSc. student at the University of Hannover, Germany, main supervisor: Prof. Stefan Helber.
3. Perla Berenice Mendoza Santos (visiting researcher at HEC Montréal and CIRRELT, May 2018 – August 2018), Co-supervised with J.F. Cordeau, Symmetry breaking for graph coloring problems, MSc student at ISAE/SUPAERO, Toulouse, France.
4. Mehdi Charles (visiting researcher at HEC Montréal and CIRRELT, April 2018 – September 2018), Co-supervised with J.F. Cordeau, One-Warehouse Multi-Retailer Problem with Market Selection, MSc student at ENSTA ParisTech, France.
5. Aldair Alvarez Diaz (visiting PhD student at HEC Montréal and CIRRELT, November 2017 – October 2018), Co-supervised with J.F. Cordeau; Hybrid methods for inventory routing problems, PhD student at Production Engineering Department, Federal University of Sao Carlos, Brazil, main advisors: Prof. R. Morabito and Prof. P. Munari.
6. Mauricio Moz Christofoletti (visiting researcher at CIRRELT, November 2017 – February 2018), The Integrated lot sizing and cutting stock problem applied to the mattress industry, MSc student at Departamento de Engenharia de Produção, FEB, UNESP, Bauru, SP, Brasil; main supervisor Silvio de Araujo.
7. Karim Perez (visiting researcher at HEC Montréal and CIRRELT, May 2016- April 2017), Co-supervised with Y. Adulyasak, Planning the molding process in molded pulp packaging industry, PhD student at Universidade Federal de Sao Carlos, Brasil; main advisors: Prof. R. Morabito and Prof. Eli Vitor Toso.
8. Pedro Luis Miranda Lugo (visiting researcher at HEC Montréal and CIRRELT, May 2016- April 2017), Co-supervised with J.F. Cordeau, Mathematical models and solution methods for the integrated lot-scheduling and routing problem in the furniture industry, PhD student at Universidade Federal de Sao Carlos, Brasil; main advisors: Prof. R. Morabito and Prof. Deisemara Ferreira.
9. Fabio Neves Moreira (visiting researcher at HEC Montréal and GERAD, September 15, 2015 – February 28, 2016), Solution methods for a large scale real life production routing problem, PhD student at the University of Porto, Portugal; main advisor: Bernardo Almada-Lobo.
10. Gislaine Melega (visiting researcher at HEC Montréal and CIRRELT, April 2015 – January 2016), Integrated lot sizing and cutting stock problems, PhD student at the Universidade Estadual Paulista UNESP, Brasil; main supervisor Silvio de Araujo.
11. Matthieu Gruson (visiting researcher at HEC Montréal and CIRRELT, April 2015 – November 2015), Co-supervised with Jean-François Cordeau, Lot sizing with backlogging and service level constraints, MSc student at ISAE/SUPAERO, Toulouse, France.
12. Nha Vo-Thanh (Visiting researcher at HEC Montréal and GERAD, September 2014-December 2014), “Mixed Integer Programming formulations for optimizing designs with one and two blocking factors”, PhD student at the University of Antwerp, Belgium, under the supervision of P. Goos and E. Schoen.
13. Diego Fiorotto (Visiting PhD student at HEC Montréal and CIRRELT, October 2013 – September 2014), “Multi-machine lot sizing”, PhD student at the Universidade Estadual Paulista UNESP, Brasil; main supervisor Silvio de Araujo.

14. Mirko Ruokokoski (visiting researcher at CIRRELT, August 2009 – February 2010), Co-supervised with JF Cordeau, “The integrated lotsizing and vehicle routing problem”, PhD student at the System Analysis Laboratory, Helsinki University of Technology.
15. Mathijn Retel Helmrich (visiting researcher at HEC Montréal, May 2009 – July 2009), “Production planning and scheduling problems with demand substitution and remanufacturing”, PhD student at the Faculty of Economics, Erasmus University, The Netherlands, main supervisors: Albert Wagelmans and Wilco van den Heuvel.
16. Hacer Goren Gunen (visiting researcher at HEC Montréal, September 2008 – August 2009), “Meta-heuristics for capacitated lotsizing problems”, PhD student at the Department of Industrial Engineering, Dokuz Eylul University, Izmir, Turkey, main supervisor S. Tunali.

Supervision of Master’s Students:

HEC Montréal MSc thesis supervision, in progress:

1. My-Phuong Ngo, in progress, June 2019, “Stochastic production and transportation planning under carbon cap-and-trade system”, co-supervision with Jorge Mendoza.
2. Bofei Wang, in progress, April 2019, “Modeling and simulation of resource sharing and equipment pooling”, co-supervision with Valérie Bélanger.
3. Chi Xu, in progress, March 2017, Lot sizing with storage location assignment.

HEC Montréal MSc thesis supervision, finished:

4. Sanae Belgarch, December 2017 – September 2019, Production line balancing problems at 3PLs: development and analysis of new mathematical models, co-supervision with Julie Paquette
5. Syed Araj Raza, in progress, February 2016 – October 2018, Real options in global supply chains, co-supervision with A. Van Assche.
6. Matthew Arseneault, March 2016 – January 2018, Lot sizing with lost sale and backlog.
7. Zhao Li, April 2015 – August 2017, Improved formulations for a printing planning problem using symmetry breaking constraints.
8. Mengyu Nie, February 2014 – February 2017, How trade policy shocks affect global value chains, co-supervision with A. Van Assche.
9. Nitin Ravishankar, April 2015 – December 2016, Analysis of inventory levels in Canadian companies, co-supervision with C. Rebolledo.
10. Gabriel Doré, November 2015 – June 2016, Integration of 3D printing in the Canadian aerospace value chain, co-supervision with J. Roy.
11. Ngoc-Thuy-Chau Nguyun, Augustus 2014 – October 2015, Interaction among costs in different lot sizing problems with substitution.
12. Julian Martinez, April 2014 – October 2015, Application of network design at Suncor, co-supervision with J.-F. Cordeau.
13. Qihua Zhong, June 2013 – October 2014, Two-level lot sizing with an emission constraint, co-supervision with O. Jabali.
14. Luis Saucedo, February 2013 – October 2014, Symmetry breaking for the Wagon Loading Problem.

HEC Montréal MSc project supervision, in progress:

1. Jing Guo, September 2019 – now, Business analysis for the engine rental & procurement in an aerospace company, co-supervised with Yossiri Adulyasak
2. Xiaoye (Summer) Ma, September 2019 – now: The application of optimization and risk management in corporate purchasing strategy at Bombardier
3. Arsalaan Khan, September 2019 – now, Spare Parts Project Management at P&WC, co-supervised with Jorge Mendoza.
4. Mohamed Al-Manssouri, April 2019 – now, Process improvement, Quality system support & Logistics cost reduction / Amélioration des processus, support du système Qualité & Réduction des coûts de logistique, Pratt & Whitney.
5. Ching-Jung (Doris) Liu, April 2019 – now, Strategic Planning for Retail Supply Chain at L’Oréal Canada

HEC Montréal MSc project supervision, finished:

6. Jitao Zhou, January 2019 – September 2019, Margin analysis process improvement project for component repair business at Pratt & Whitney Canada
7. Elie El Kareh, May 2018 – December 2018, Process Analysis at Familiprix
8. Linghan (Laura) Zhu, January 2018 – August 2018, Supply Chain Process Digital Transformation in Pratt & Whitney Canada, co-supervision with Y. Adulyasak.

9. Shilpa Rawat, September 2017 – May 2018, Lifecycle cost model for the supply chain of a gas turbine at Siemens, co-supervision with Y. Adulyasak.
10. David Sanchez Fernandez, April 2017 – December 2017, Achieving Competitive Excellence at Pratt & Whitney Canada: deployment at the NPI department. Pratt & Whitney, co-supervision with Y. Adulyasak.
11. Alex Delisle, April 2017 – December 2017, Pratt & Whitney, co-supervision with Y. Adulyasak.
12. Qichen Zhou, January 2017 – October 2017, Production line balancing at a logistics service provider, KD Services, co-supervision with J. Paquette.
13. Simon Santerre, May 2016 – December 2016, Analysis of the inventory management at Les Emballages GAB-Induspac.
14. Victor Lheritier, May 2016 – December 2016, Development of a visual tool for capacity management and analysis at Pratt & Whitney Canada, co-supervision with S. Landry.
15. Alexandre Ouellet, May 2015 – December 2015, Demand forecasting at Keurig Canada.
16. Lorraine Boulos, May 2015 – December 2015, co-supervision with H. Giroux.
17. Maximin Zengue, May 2015 – December 2015.
18. Orianne Philippe, June 2013 – December 2013, Implantation du système de gestion de la performance et étude d'impartition des activités d'approvisionnement chez Bombardier Aéronautique
19. William Beverly, June 2013 – December 2013, Elaborating a methodology and suggesting working tools to help answer the fleet allocation problem an engine leasing department.

Rotterdam School of Management (2004-2008)

Supervision of 4 master's theses

Co-Supervision of 12 master's theses

Supervision of 4 (E)MBA projects

Member of PhD jury:

1. Tiffany Bayley, University of Waterloo, external examiner, April 3, 2018.
2. Maryam Darvish, Université Laval, member of the jury, December 1, 2017.
3. Mehdi Ghotboddini, Desautels Faculty of Management, McGill University, member of the jury, February 13, 2017.
4. Judson Kenney, Desautels Faculty of Management, McGill University, member of the jury, May 27, 2016.
5. Karine Sinclair, HEC Montréal, member of the jury (président-rapporteur), May 6, 2016.
6. Valérie Bélanger, HEC Montréal, member of the jury (président-rapporteur), October 6, 2015.
7. Mohammad Nikoofal, Desautels Faculty of Management, McGill University, member of the jury, September 5, 2014.
8. Mira Thoumy, HEC-Montréal, member of the jury (président-rapporteur), June, 2013
9. Leandro Coelho, HEC Montréal, member of the jury (président-rapporteur), October 10, 2012.
10. Arcan Nalcan, Desautels Faculty of Management, McGill University, member of the jury, October 2008.

Presentations:

- “A Branch-and-Cut Algorithm for an Assembly Routing Problem”, with M. Chitsaz and J.-F. Cordeau, **Tenth International Workshop on Lot Sizing (IWLS 2019)**, Paris, France, 21-23 August 2019.
- “Flexibility in Production Planning”, **GERAD Seminar**, Montreal, October 23, 2018,
- “Lot sizing with simultaneous backlog and lost sales”, with M. Arsenault, **Ninth International Workshop on Lot Sizing (IWLS 2018)**, Brazil, 22-24 August 2018.
- “Lot sizing with simultaneous backlog and lost sales”, with M. Arsenault, **Optimization Days**, Montréal, May 2018.
- “The role of flexibility in Supply Chain Risk Management” (in French), Carrefour Logistique, HEC Montréal, November 24, 2017.
- “A unified decomposition heuristic for the assembly, inventory and production routing problem”, with M. Chitsaz and J.-F. Cordeau, **Eighth International Workshop on Lot Sizing (IWLS 2017)**, Glasgow, 23-25 August 2017 (23 August 2017).
- “Integrated supply chain planning” (in French), Inaugural lecture, HEC Montréal, January 26, 2017.

- “Tutorial: Dantzig-Wolfe decomposition for lot-sizing problems”, with Z. Degraeve, **Seventh International Workshop on Lot Sizing (IWLS 2016)**, Hannover, 22-25 August 2016 (22 August 2016).
- “A capacitated multi-item lot sizing problem with stochastic setup times”, with D. Tas, M. Gendreau, O. Jabali, **INFORMS Meeting**, Philadelphia, 1-4 November 2015 (November 4, 2015).
- “Heuristic methods for a capacitated lot sizing problem with stochastic setup times”, with D. Tas, M. Gendreau, O. Jabali, **Sixth International Workshop on Lot Sizing (IWLS 2015)**, Montreal, 24-26 August 2015 (26 August 2015).
- “An analysis of formulations for the capacitated lot sizing problem with setup cross-over”, with S. de Araujo and D. Fiorotto, **CORS/INFORMS International Conference**, Montréal, Canada, June 14-17, 2015. (June 17, 2015)
- “Recent Advances in Solving the Production Routing Problem”, with Y. Adulyasak and J.-F. Cordeau,
ERIM / Economics Institute Workshop, Rotterdam, October 4, 2013
- “Reoptimization Capabilities of Benders Decomposition for Production Routing under Demand Uncertainty”, with Y. Adulyasak and J.-F. Cordeau,
Fourth International Workshop on Lotsizing, Brussels, August 26-28, 2013.
- “The Stochastic Production Routing Problem”, with Y. Adulyasak and J.-F. Cordeau,
EURO/INFORMS 26th Conference on Operational Research, Rome, Italy, July 1-4, 2013.
- “Symmetry breaking in MIP optimization problems”
CIRRELT, Montréal, March 28, 2013.
- “Optimization Based Adaptive Large Neighborhood Search (ALNS) for the Production Routing Problem”, with Y. Adulyasak and J.-F. Cordeau, **INFORMS Meeting**, Phoenix, 14-17 October 2012 (15 October 2012).
- “Improved Column Generations for Clustering Problems”, with J. Desrosiers,
Journée de la recherche, HEC Montréal, April 2012.
- “A hybrid heuristic for the production routing problem”, with Y. Adulyasak and J.-F. Cordeau,
Second International Workshop on Lotsizing, Istanbul, Turkey, August 2011.
- “Efficient Symmetry Breaking Formulations for the Job Grouping Problem”, with J. Desrosiers,
Optimization Days, Montreal, Canada, May 2-4, 2011.
- “Improved Formulations for Symmetry Breaking: The Job Grouping Problem”, with J. Desrosiers,
Journée de la recherche, HEC Montréal, April 2011.
- “Binary clustering problems: symmetric, asymmetric and decomposition formulations”, with Jacques Desrosiers,
CORE, Université Catholique de Louvain, Belgium, March 29, 2011;
Journée de la recherche, HEC Montréal, April 2010.
- “Binary Clustering Problems: Symmetric, Asymmetric and Decomposition Models”, with J. Desrosiers,
INFORMS, Austin, TX, USA, November 7-10, 2010;
Optimization Days, Montreal, Canada, May 10-12, 2010.
- “Formulations and a Branch-and-Cut algorithm for a production-distribution-routing problem”, with M. Ruokokoski, O. Solyali, J.F. Cordeau and H. Süral,
International Workshop on Lotsizing, Gardanne, France, August 2010.
- “Dynamic Lotsizing: Introduction and decomposition approaches”,
GERAD, Montréal, November 2009.
- “Symmetry Breaking constraints in MIP’s”, **INFORMS Meeting**, Washington DC, October 2008.
- “A classification of MIP’s for Dantzig-Wolfe decomposition”,
Workshop on Column Generation, Aussois, France, June 2008.
- “Breaking symmetry in MIP’s: parallel machine lotsizing”, invited seminars at
CORE, Louvain-La-Neuve, Belgium, March 2008;
University of Antwerp, Belgium, April 2008;
Econometrics Institute, Erasmus University, The Netherlands, May 2008.
- “Solving production planning problems using decomposition approaches”, Research Seminar, John Molson School of Business, **Concordia University**, Montreal, Canada, April 2007
- “Solving industrial lot sizing problems using decomposition approaches”, Research seminar, **McGill University**, Montreal, Canada, December 2006
- “Solving Integer Programming Problems Using Symmetry Breaking Constraints”, Research seminar, **McGill University**, Montreal, Canada, October 2006
- “Symmetry breaking in IP models: Parallel machine lotsizing”, **INFORMS Meeting**, San Francisco, November 2005.
- “Lot Sizing on Parallel Machines”, **Optimization Days**, Montreal, Canada, May 2005.

- “Combining Column Generation and Lagrangian Relaxation”, with D. Huisman, **International Colloquium for the 25th anniversary of GERAD**, Montreal, Canada, May 2005.
- “Decomposition Approaches for the Capacitated Lot Sizing Problem”, with Z. Degraeve, Research Seminar, **GERAD**, Montreal, Canada, August 2003.
- “A Comparison of Lower Bounds for the Capacitated Lot Sizing Problem”, with Z. Degraeve, **EURO/INFORMS Meeting**, Istanbul, July 2003.
- “Strong Lower Bounds for the Capacitated Lot Sizing Problem with Set Up Times”, with Z. Degraeve, **INFORMS Meeting**, San José, November 2002.
- “Two Alternative Decomposition Reformulations for the Capacitated Lot Sizing Problem”, with Z. Degraeve, Research Seminar, **Erasmus University**, The Netherlands, June 2002.
- “Solving Industrial Lot Sizing Problems: A Column Generation and Branch-and-Price Approach”, with Z. Degraeve, Research Seminar, **Erasmus University**, The Netherlands, March 2002.
- “Solving an Industrial Lot Sizing Problem”, with Z. Degraeve, Research Seminar, **London School of Economics**, March 2002.
- “A Branch-and-Price Algorithm for the Capacitated Lot Sizing Problem”, with Z. Degraeve, **INFORMS Meeting**, Miami, November 2001.
- “A Strategic Product Range Split Problem”, with Z. Degraeve and L. Schepens, Research Seminar, **London Business School**, March 2001.
- “A Production Planning Problem in the Tire Industry”, with Z. Degraeve, **INFORMS Meeting**, San Antonio, November 2000.
- “An Algorithm for the Multi-Item Lot Sizing Problem with Setup Times at Solideal”, with Z. Degraeve, **14th International ORBEL Conference**, Belgium, January 2000.
- “Tire Production Scheduling at Solideal”, with Z. Degraeve, **INFORMS Meeting**, Philadelphia, November 1999.
- “Alternative Formulations for a Layout Problem in the Fashion Industry”, with Z. Degraeve and W. Gochet, **13th International ORBEL Conference**, Belgium, January 1999.

Teaching:

Development of teaching cases

- *Liquid Gold Case: Innovation on a European scale at Unilever*; 2005, with Edens, B., Leeman, D., van Nuenen, J., and J. van den Ende.
A short version of this case appeared in the following text book: N. Thomson and C. Baden-Fuller, 2010. *Basic Strategy in context*. Wiley, 303-306.

HEC Montréal

- *Decision Support Tools for the Operations Manager*, elective in the MSc programme, Winter 2010, Summer 2011, Summer 2012, Winter 2013, Winter 2014, Winter 2015, Winter 2016, Fall 2016, Fall 2017, Fall 2018, Summer 2019.
- *Conception et amélioration des systèmes opérationnels*, core course in the MSc. Programme, Winter 2015, Winter 2016, Winter 2017, Winter 2018.
- *Design and Analysis of Operational Systems*, core course in the MSc. Programme, Winter 2019.
- *Managing Supply Chains*, elective in the MBA programme, Fall 2014 (with J. Roy), Fall 2015 (with Claudia Rebolledo), Winter 2016, Winter 2019.
- *Managing Products and Services*, MBA elective, Winter 2015 (with G. Gerbhart and R. Tyagi), Winter 2016 (with G. Gerbhart).
- *Gérer des produits et des services*, MBA elective, Fall 2016 (with Pierre Trudel and R. Tyagi), Fall 2017 (with Pierre Trudel and Denis Cauchon).
- *Operations Management*, core course in the MBA programme, Winter 2009 (3 sections), Winter 2010 (3 sections), Winter 2011 (3 sections), Winter 2012 (2 sections), Winter 2013 (2 sections), Winter 2014 (2 sections).
- *Gestion des Opérations*, core course in the MBA programme, Winter 2011 (1 section), Winter 2012 (1 section).
- *Managing Product and Service Variety*, elective in the MBA programme, Spring 2009.
- *Logistics and Supply Chains*, elective in the MBA programme, Winter 2009, Winter 2012.
- *Advanced Production Planning*, PhD course, Summer 2010, Summer 2015, Summer 2016.
- *Operations Management*, core course in the Bachelor’s programme, Fall 2008.

Rotterdam School of Management, Erasmus University

- *Managerial Decision Analysis*, OneMBA program.
- *Management Science*, MBA program.

- *Management Science*, Executive MBA program.
- *Management Science*, Master program General Management.
- *Refresher Mathematics*, MBA program.
- *Managing Product Variety*, Supervision of Bachelor's thesis projects (in Dutch), Third year Bachelor's program in Management.
- *Production and Logistics Management* (case discussion classes), second year Bachelor's program in Management.
- Supervision Executive MBA In-Company Projects.

Desautels Faculty of Management, McGill University

- *Data, Models & Decisions*, MBA program and Masters in Manufacturing Management, Sept. – Dec. 2006, Sept. – Dec. 2007.
- *Analysis of Production Operations*, MBA program and Masters in Manufacturing Management, Sept. – Dec. 2006.

Professional Service (Administration)	<p>Department representative in the Local PhD Committee at HEC (February 2009 – present)</p> <p>Responsible for the GOL profile in the MBA programme (June 2010 – June 2012)</p> <p>Member of the HEC committee on MBA reform (March 2011 – June 2012)</p> <p>President of the Faculty Search Committee GOL (September 2011 – February 2012, September 2014-December 2015; September 2015-December 2016; September 2017-December 2017, September 2019-December 2019)</p>
Professional Service (Research)	<p>Member of the Steering Committee for the International Workshop on Lotsizing, Gardanne, France, August 25-27, 2010.</p> <p>Member of the Steering Committee for the Second International Workshop on Lotsizing (IWLS 2), Istanbul, Turkey, August 24-26, 2011.</p> <p>Member of the jury for the CORS undergraduate student paper competition (April 2011, April 2012)</p> <p>Evaluator for the RIRL 2012 Programme Committee, August 2012</p> <p>Member of the Steering Committee for the Third International Workshop on Lotsizing (IWLS 3), Rotterdam, The Netherlands, August, 2012.</p> <p>Member of the Steering Committee for the Fourth International Workshop on Lotsizing, Brussels, Belgium, August 26-28, 2013.</p> <p>Member of the Steering Committee for the Fifth International Workshop on Lotsizing, Porto Portugal, August 27-29, 2014.</p> <p>Chair of the Organizing Committee for the Sixth International Workshop on Lotsizing, Montréal, Canada, August 24-26, 2015.</p> <p>Member of the Steering Committee for the Seventh International Workshop on Lotsizing, Hannover, Germany, August 22-25, 2016.</p> <p>Member of the Steering Committee for the Eighth International Workshop on Lotsizing, Glasgow, U.K., August 23-25, 2017.</p> <p>Member of the Steering Committee for the Ninth International Workshop on Lotsizing, Brazil, August 22-24, 2018.</p> <p>Member of the Steering Committee for the Tenth International Workshop on Lotsizing, Paris, August 21-23, 2019.</p>

Languages:	Dutch:	Native speaker
	English:	Fluent
	French:	Fluent
