Volume 2
Issue 1

Newsletter

Montréal Operations Research Student Chapter, December 2017

President's Letter

Greetings MORSC Members,

It seems like just yesterday that I was being voted in as the second President of MORSC when in reality, six months have passed by in a flash; but oh what a flash it has been! This edition of our newsletter covers all the amazing work that has been done by our team in the past year, highlighting the key events and some of the phenomenal research being done by our members. Speaking of which, in line with our mission to continue growing we have doubled our membership since last December now sitting at over 220 members. This has come on the back of a coordinated effort by our marketing team with their successful initiatives on social media. We are not only accessible by our website, but are now extremely active on Twitter and Facebook with weekly segments and are looking to expand to LinkedIn and YouTube. Moving forward we hope to continue growing while also ensuring that our members are active and are provided with meaningful events and information to them.

A few of the events I am most proud to have been a part of were the two day CPLEX training school hosted by CPLEX experts and the workshop/Seminar given by Jorge Cham on PHD life. Although they are on two ends of the spectrum in terms of content, both were extremely well received by our members and took a truly coordinated effort by our team to organize. Of course, the plethora of events are all mentioned in the past events section.

The chapter would not be where it is today without the help of our many collaborators and sponsors. A special thanks to GERAD, CIRRELT, our new partners the MIAE Graduate Student Committee and the Canada Excellence Research Chair in Data Science for Real-time Decision-Making for their support in hosting a variety of successful events. Our ability to plan and host fruitful seminars, workshops, tutorials and networking events stems directly from the financial support of our partners and the hard work of their staff. We are also grateful to CORS, the ECSGA, and GSA for their continued commitment to the chapter as well as our new sponsor Première Moisson. A final thank you must be given to our faculty advisors who continue to provide useful connections as well as creative ideas for the chapter.

It would be remiss of me if I didn't mention the exposure that came when the chapter was awarded with the CUM LAUDE tier of award for outstanding participation and performance at this year's INFORMS annual meeting in Houston TX. It was an honor to attend the event and network with other chapter representatives as well as many leading researchers in OR. This also provided a benchmark for what the chapter should be aiming to achieve in the years to come.

It has been quite a ride as the chapter moves through its second year in existence and I believe we are on the right path, staying true to our founding principles. The field of OR continues to flourish in Montreal and the chapter is perfectly positioned to help grow the community and ensure that everyone has access to the newest and most innovative research being done. I hope to see you at the many events to come in the New Year and look forward to making MORSC the best it can possibly be together.

Regards,

Gabriel Vanasse

Points of Interest

- *High impact events for OR students*
- *New Partnerships*
- *More social events*
- *Successful collaborations with local and international entities.*
- *Seminars with well-known researchers and professionals*

Inside this issue:

Letter from the Editor

Dear Readers,

As 2017 draws to a close and you wrap up your fall semester, the Montréal Operations Research Student Chapter has prepared some light reading material we hope you enjoy over the holiday break.

In this issue, we 've kept some of the favourites such as a write up of the chapter's 2017 initiatives, a list of selected events the chapter hosted promoting knowledge sharing, work/life balance, and diversity, and an interview with an Operations Research expert. Our interviewee for this issue is Anne Mercier, Ph.D.. She is an accomplished researcher and successful professional at GIRO where Operations Research is used for the operations of public transit systems all over the world.

Dr. Mercier shares her opinion on the importance, advantages, and history of industry and academic collaborations, particularly in Montréal, and gives recommendations and pointers to those thinking of entering industry positions. I highly recommend this piece, as it provides a different perspective than what we are usually exposed to in academia.

This issue contains two new sections. Our "Made in Montréal" section highlights some of the recent academic work of our chapter members while our "Feedback" column contains MORSC members' comments on some of the chapter's initiatives.

From all of us at MORSC, we hope you've had a great 2017 and look forward to staying in touch through 2018.

Carlos A. Zetina-Editor.
c_zetina@encs.concordia.ca

Past Events

After an eventful 2016, the chapter showed no signs of slowing down in 2017. Maintaining a close partnership with long time partners GERAD and CIRRELT, the chapter co-hosted 6 joint student research seminars, a speed networking event, an IBM CPLEX training school , an outreach event for high school students and a year long writing activity.

In addition, the chapter sought out new partnerships and collaborations with institutions such as the Data Science for Real-Time Decision Making Excellent Chair, Calcul Quebec, IBM, TORCH, and the MIAE GSC. These new partnerships led to impactful streams such as the distinguished speaker series, the public lecture and workshop with Jorge Cham, creator of PhD comics, the annual Operations Research challenge for high school students, monthly coffee breaks, the speed networking event with representatives from five Montréal companies, the CPLEX tutorial with IBM consultants and the year-long writing activity.

CPLEX Tutorial

The chapter will continue to collaborate with these and other organizations to host high impact events for its members the rest of the 2017-2018 academic year.

Joint Student Research Seminars

- The Benders Decomposition method applied to Stochastic Network Design Problems
  Author: Ragheb Rahmaniani
  Date: Feb 17th, 2017
- Solving Winter maintenance problems
  Author: Olivier Quirion-Blais
  Date: March 31st, 2017
- A practical time slot management and routing problem in attended home delivery
  Author: Bruno Petrato Bruck
  Date: May 26th, 2017
- Advanced Planning and Scheduling
  Author: Masoud Chitsaz
  Date: June 9th, 2017
- A comparison of formulations for an integrated three-level lot sizing and transportation problem.
  Author: Matthieu Gruson
  Date: Oct. 10th 2017
- The L-shaped method: A tutorial
  Author: Jesus Rodriguez
  Date: June 9th, 2017

Workshops and Tutorials

- Using Calcul Québec Servers for Optimization
  Author: Daniel Stubbs (Calcul Québec)
  Date: March 16th, 2017
- Advanced CPLEX training school
  Authors: Pierre Bonami, PhD, Andrea Tramontani, PhD, and Domenico Salvagnin, PhD (IBM)
  Date: June 23-24th, 2017

Other Streams & Events

- Monthly Joint Coffee Break
- The Operations Research Challenge
- MORSC T-shirt Competition
- Trapped: An escape game get together
- MORSC 1st Anniversary celebration and distinguished seminar
- Industry Speed Networking Event
- Post MIP workshop Picanha Barbecue at Parc La Fontaine
- Distinguished Speaker Series
- Special General Assembly
- "We have no idea"- public lecture and workshop with Jorge Cham (PHD comics)
- OR/MS year-long writing activity.

Interview with Anne Mercier, Ph.D.

Biography

Anne Mercier received her B.Com in Management Science and Information Systems and M.Sc. in Operations Research from McGill university and HEC Montréal, respectively. She was a part-time lecturer at HEC Montréal for 10 years while doing her M.Sc., Ph.D. and working.

She obtained her Ph.D. in Applied Mathematics from École Polytechnique de Montréal, under the supervision of Prof. François Soumis. Her thesis "Decomposition Methods to Solve Large Integrated Airline Scheduling Problems" won the Best Dissertation Prize from the Aviation Applications Section of INFORMS.

After her studies, she joined ExPretio where she worked on revenue management problems for rail operators and airlines. She then joined GIRO almost five years ago, a software provider for public transit operations management and optimization solutions. At GIRO, she is an expert in fine-tuning the crew and vehicle scheduling algorithms and she also leads the European projects group working with clients from Belgium, Germany, Spain and the Netherlands.

Carlos A. Zetina (CAZ): Thank you for accepting our invitation to this interview. I would like to start with the first steps in your career path. Not many students know about Operations Research and Management Sciences (OR/MS) before starting their graduate students. How did you learn about OR/MS and what factors or events made you choose to do an undergraduate degree in Management Science and Information Systems?

Anne Mercier, Ph.D. (AM): I had always liked mathematics. It was easy for me in school, but I never knew that it could be used to solve such applied and interesting problems. I had applied for a bachelor's degree in math but chose instead to get a management degree because I didn't know exactly what the career choices of a math degree were. The compromise was a concentration in Management Science. It was mostly extra statistics courses, but in the third year I discovered linear programming. We were only 5 or 6 in the class and we had a take-home exam: a big modeling problem to be formulated and solved with GAMS. Everybody was supposed to participate, but I ended up doing it together with another classmate for the whole group. We enjoyed it so much that we wanted to ask for another problem! As for Information Systems, it was because my computer skills were not that good and I figured it was essential to improve for the future. To put you in perspective, I had my first computer at home when I was 16. It was a gift from my grandmother. Things have changed quite a bit since then!

CAZ: Upon completing your M.Sc., you went into the workforce for a couple of years. Could you share with us why you decided to not pursue a Ph.D. immediately after?

Interview with Anne Mercier, Ph.D.

AM: I wasn't necessarily looking for a job right away, but at the end of my M.Sc., I heard from a professor about a small marketing company that wanted to hire a Management Science graduate to develop tools to analyze data gathered by their clients. It was before the expression "big data" was invented! It was a good experience, but I left after a couple of years because I felt I had more to learn in school.

CAZ: Would you recommend that students have work experience before pursuing a Ph.D.? Why/ Why not?

AM: In my case, it was very good because it made me realize what I wanted and made me very motivated afterwards. Choosing to go back to school had the effect of making me very studious, much more than before. I had developed good work habits which transitioned into my study habits, i.e. on a strict schedule and as efficient as I could be! On the other hand, if you already know you want to pursue a Ph.D., there's no need to wait.

CAZ: Having worked on Operations Research (O.R.) in both academia and industry, what would you say are the major differences between the two environments (with respect to content, work rhythm, results, etc.)?

"Industry provides researchers with new problems"

AM: In academia, you're looking for new results, it's a pioneering role. In the industry, it doesn't matter if the methodology is already known as long as you can make it work for the problem at hand. Generally speaking, I would say academia proposes the broad spectrum methodologies and industry fine-tunes them. An important aspect in the industry is to have robust results, it's a balance between quality and robustness. The problems are not as clean and the results have to be "streetable", you have to accept working with many conditions and exceptions.

As for the work rhythm, the variance is greater in academia, everybody is the master of their own schedule. People contribute in different ways and they control where they want put their time and energy. The motivation has to come from the individual. In industry, there's a pace set by contracts and clients. You don't have to create your own work, it comes to you. The motivation comes naturally from the group. Depending on the corporate culture, deadlines and deliveries can accelerate the rhythm considerably or be managed to keep a balance between personal and professional life. That's what we try to do at GIRO.

CAZ: Researchers are often evaluated based on their publications and impact. What reasons would you give a researcher to work with industry despite the low likelihood of it leading to a publication?

"Working with industry can lead to … what the relevant problems are …"

AM: Industry provides researchers with new problems to solve that are closer to what's needed in practice, i.e. ensuring realism and applicability of the work. Also, academia can partner with the industry to get grants and thus provide more money to fund students and highly skilled professionals. The industry also has access to bigger sets of data to test research ideas. Finally, working with the industry can lead to consulting contracts which allows researchers to expand their industry contacts and learn what the relevant problems are for companies.

Interview with Anne Mercier, Ph.D.

CAZ: Do you believe more can be done to have a better synergy between O.R. in academia and industry? If so, what are the opportunities that you've noticed?

"I think in Montréal there is a good synergy."

AM: I think in Montréal there is a good synergy. From what I know of the O.R. companies we have here, many are actually spin-offs from a university. This is the case of ExPretio and GIRO and their link with academia is still present years later. There are shared grants that finance long-term research. There are also internships offered for Ph.D. students and even post-doctoral fellows. It's good for both sides. People in academia are more aware of the recent literature and new findings whereas the industry can provide new problems to solve and bigger datasets. In the industry, we have to maintain our network of contacts with academia, participate in conferences and accept to publish the shared results more often. Both industry and academia should continue collaborating so academic study can be relevant to industry needs and industry can stay up to date on the recent methodologies. It's a win/win collaboration.

CAZ: With over 10 years of experience in applying O.R. to real world problems, what skills would you recommend that students polish to have a successful career in applying O.R. in industry?

AM: I would say that to get started, computer science skills are very important. Object-oriented programming is a must since in industry, all models and algorithms are not worth very much without being implemented and tested with real data. In the same vein, database management is very important. In academia, data usually comes from a text file while in the industry, data has to be loaded, accessed and stored efficiently, in a more organized way.

Depending on the size of the company or the maturity of the products, things can sometimes be slow to change. Patience, timing and creativity are necessary to find ways to improve existing tools rather than starting from scratch.

People skills are also very important. The development of algorithms is one thing but a great part of our work in the industry is to apply and fine-tune them for the clients so they can be used on their own afterwards. Training and support is key to good results.

CAZ: Is there any particular methodology (heuristics, matheuristics, column generation, decomposition methods, etc.) that you've found very useful in solving real world O.R. problems? If so, which?

"Real world problems are usually too big to be solved to optimality."

AM: All those methodologies are important. Depending on each problem and on the maximum expected computing time, a different method can be used. Even when an exact method such as column generation is used, it's usually within a higher-level heuristic. Real world problems are usually too big to be solved to optimality. Not to mention, they are rarely fully linear and determinist. I would thus recommend the students to get some knowledge on how to solve non-linear and stochastic problems. Of course, integer programming is a must.

CAZ: Going back to when you started the Ph.D. program. What skills from your work experience did you find useful during your Ph.D.?

Interview with Anne Mercier, Ph.D.

AM: Work made me realize that documentation is very important. When you study, projects last a semester so you can rely on your memory. When you work on different projects in parallel with different colleagues/clients that come and go, you learn to document. This proved to be very useful when working on my thesis, writing articles and going back to the code after a while. It makes things so much easier and efficient.

CAZ: O.R./M.S. Ph.D. students must have many skills such as modeling, coding, and doing mathematical proofs, not to mention time and stress management. Most students of us have a hard time with some of these. Can you share with us some of your struggles as a Ph.D. student? How did you overcome them?

AM: I didn't have an undergraduate mathematical background so mathematical proofs were a challenge for me. I often had the intuition of the proof without being able to completely formalize it. I overcame this by practicing. I must have done hundreds of them when studying for my pre-doctoral exams! Coding was also difficult for me, but I really enjoyed it, so even though my code wasn't clean and nice, it was bug-free because I was testing all possible cases I could imagine.

CAZ: The O.R. student chapter was established to help students overcome these difficulties. What recommendations do you have for the organization to better help students?

AM: My first recommendation is to make sure to get the students to use your services when they need them. Some students stand aside and are not aware of all the activities. I suggest publicizing it with specific examples on how the chapter can help.

CAZ: What do you believe is the added value of a Ph.D, if any, when going back to work in industry?

"... I am a better professional because of my academic experience."

AM: Good question! It gives some added credibility both internally and with the clients. In my case, I have also made contacts that I can still use to keep a link with academia. Most importantly, my academic background gave me knowledge about O.R. that I couldn't have learned as well while working. I also learned how to fully study a subject from every possible angle. I am sure that I am a better professional because of my academic experience.

CAZ: To conclude, having had a successful career in both academia and industry, what advice do you have for students who are undecided about which of these paths to pursue?

AM: Both lead to interesting careers, that's for sure. To be successful in academia, you have to be very autonomous and self-motivated. It's a privileged job with a lot of flexibility. On the other hand, it's hard to separate private and professional lives since the work is never completely finished. To be successful in the industry, you need leadership and a tolerance for stress. It can be very exciting but also frustrating sometimes because you have to move forward in an environment that is more rigid and unpredictable.

I sometimes ask myself if I have made the right choice, and I always conclude that I have. I love to solve real-life problems and to interact with actual users of our algorithms. It gives me a lot of satisfaction to see our bus and metro schedules actually running in hundreds of cities all around the world! In my opinion, the key to a fulfilling job in the industry is a sense of identity and pride with respect to the products developed.

Upcoming Conferences

4th Conference on Optimization Methods and Software. Havana, Cuba (16-20/12/2017) http://wias-berlin.de/workshops/oms2017/

6th INFORMS Transportation Science and Logistics Society Workshop "E-Commerce and Urban Logistics". Hong Kong (8-10/1/2018) http://tslworkshop2018.hsmc.edu.hk/main.php

7th edition of the Winter School on Network Optimization. Lisbon, Portugal (15-19/1/2018) http://netop-t2018.campus.ciencias.ulisboa.pt

Winter School on Optimization and Operations Research: Data Science and Optimization. Zinal, Switzerland (14-19/1/2018) http://transp-or.epfl.ch/zinal/

WGSCO2018 - Workshop on Graph Spectra, Combinatorics and Optimization. Aveiro Portugal (25-27/1/2018) http://wgsco2018.web.ua.pt/node/53

Conference on Design of Reliable Communication Networks. Paris, France (19-20/2/2018) https://drcn2018.lip6.fr/

2018 School on Column Generation
Paris, France (26-2/2-3/2018) https://www.gerad.ca/colloques/ColumnGeneration2018/

2018 Operations Research Summer School for Young Latin American Schoolars (ELAVIO) . Marbella, Chile (5-9/3/2018) http://www.elavio.cl/9/en/inicio

2018 EURO Winter Institute on Lot Sizing and Related Topics . Frankfurt, Germany (5-16/3/2018) https://www.wiwi.europa-uni.de/en/lehrstuhl/iom/scm/ewi2018/index.html

ISCO 2018 Spring School "Advanced MIP Formulations and Computations" . Marrakesh, Morocco (9-10/4/2018) http://isco2018.lip6.fr/?q=node/5

IEEE Wireless Communications and Networking Conference. Barcelona, Spain (15-18/4/2018) http://wcnc2018.ieee-wcnc.org/

IEEE International Conference on Computer Communications. Honolulu, Hawai (15-19/4/2018) http://infocom2018.ieee-infocom.org/node/6

IEEE/IFIP Network Operations and Management Symposium. Taipei, Taiwan (23-27/4/2018) http://noms2018.ieee-noms.org/

EURO working group on location analysis. Edinburgh, UK (23-25/5/2018) https://www.euro-online.org/ewgla/

CORS 60th Annual Conference. Halifax, Canada (4-6/6/2018) https://eventspe.com/cors2018/index

IWOBIP'18 - International Workshop on Bilevel Programming. Lille, France. (18-22/6/2018) https://iwobip2.sciencesconf.org/

Summer School "Operations Research - Machine Learning". Frejus, France (25-29/6/2018) https://cermics-lab.enpc.fr/summer-school-operations-research-and-machine-learning/

Joint EURO/ALIO International Conference 2018 on Applied Combinatorial Optimization . Bologna, Italy (25-27/6/2018) https://events.unibo.it/euroalio2018

International Symposium on Mathematical Programming 2018. Bordeaux, France (1-6/7/2018) https://ismp2018.sciencesconf.org/resource/page/id/2

EURO 2018. Valencia, Spain (8-11/7/2018) http://euro2018valencia.com/

Made in Montréal

The "Made in Montréal" section highlights the recent papers and technical reports produced by MORSC members, giving testimony to the productivity of the Montréal O.R. student community.

Published/Accepted Journal Articles

C. Ortiz-Astorquiza, I. Contreras, G. Laporte, "Formulations and approximation algorithms for multi-level uncapacitated facility location", *INFORMS Journal on Computing.*

M. Gruson, J.-F. Cordeau, R. Jans, "The impact of service level constraints in deterministic lot sizing with backlogging", *Omega.*

C.A. Zetina, I. Contreras, J.-F. Cordeau, E. Nikbakhsh, "Robust uncapacitated hub location", *Transportation Research Part B: Methodological.*

R. Rahmaniani, T. G. Crainic, M. Gendreau, W. Rei, "The Benders decomposition algorithm: A literature review", *European Journal of Operational Research.*

A.Allah Taleizadeh, H. Reza Zarei, B. R. Sarker, "An optimal control of inventory under probablistic replenishment intervals and known price increase", *European Journal of Operational Research.*

C. Ortiz-Astorquiza, I. Contreras, G. Laporte, "Multi-level facility location problems", *European Journal of Operational Research.*

A. Amini, P. Badri, M. Sojoodi, "Robust fixed-order dynamic output feedback controller design for nonlinear uncertain suspension system", *Mechanical Systems and Signal Processing.*

A. Amini, P. Badri, M. Sojoodi, "H∞ consensus of nonlinear multi-agent systems using dynamic output feedback controller: an LMI approach", *Nonlinear Dynamics.*

H. A. Alameddine, S. Sebbah, C. Assi, "On the interplay between network function mapping and scheduling in VNF based networks: A column generation Approach", *IEEE Transactions on Network and Service Management.*

S. Ayoubi, S. Sebbah, C. Assi, "A cut-and-solve based approach for the VNF assignment problem", *IEEE Transactions on Cloud Computing* .

F. Enderer, C. Contardo, I. Contreras, "Integrating dock-door assignment and vehicle routing with cross-docking", *Computers & Operations Research.*

M. Tanash, I. Contreras, N. Vidyarthi, "An exact algorithm for the modular hub location problem with single assignments", *Computers & Operations Research.*

W. Nassief, I. Contreras, B. Jaumard, "A comparison of formulations and relaxations for cross-dock Door Assignment Problems", *Computers & Operations Research.*

M. Jeihoonian, M. Kazemi Zanjani, M. Gendreau, "Closed-loop supply chain network design under uncertain quality status: Case of durable products", *International Journal of Production Economics.*

I. Contreras, M. Tanash, N. Vidyarthi, "Exact and heuristic approaches for the cycle hub location problem", *Annals of Operations Research.*

S. Tavakoli, A. Allah Taleizadeh, "An EOQ model for decaying item with full advanced payment and conditional discount", *Annals of Operations Research.*

Made in Montréal

Conference Papers

R.M.O Cruz, H. Zakane, R. Sabourin, G.D.C. Cavalcanti, " Dynamic ensemble selection VS K-NN: why and when dynamic selection obtains higher classification performance", *The seventh International Conference on Image Processing Theory, Tools and Applications, (IPTA), 2017.*

A. Amini, A. Mohammadi, A. Asif, "Event-based consensus for a class of heterogeneous multi-agent systems: An LMI approach", *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2017.*

Technical Reports/Preprints

A. Baggio, M. Carvalho, A. Lodi and A. Tramontani, "Multilevel approaches for the critical node problem", *CERC DS4DM Technical-Report 2017-012.*

> *In order to implement optimal network defense strategies, we solve a tri-level programming problem that takes into account all feasible attacks and a subsequent protection.*

M. Tohidi, M. Kazemi Zanjani, I. Contreras, "Physicians Planning Framework for Polyclinics Under Uncertainty", *Submitted to the European Journal of Operational Research.*

> *We present a bi-level planning framework in which clinic scheduling and capacity planning are developed in the first level, and physicians scheduling and rescheduling in the second level .*

R. Rahmaniani, T. G. Crainic, M. Gendreau, W. Rei, "Accelerating the Benders Decomposition Method: Application to Stochastic Network Design Problems", *CIRRELT Technical Report 2017-22.*

> *We study various techniques to accelerate the Benders method. We conduct numerous computational results on benchmark instances from Network Design.*

C.A. Zetina, I. Contreras, J.-F. Cordeau, "Exact algorithms for the multicommodity uncapacitated fixed-charge network design problem", *CIRRELT Technical Report 2017-69.*

> *We present two exact algorithms based on Benders decomposition for solving the multicommodity uncapacitated fixed charge network design problem . Their performance is between 10x -100x faster than the state-of-the-art.*

C.A. Zetina, I. Contreras, E. Fernández, C. Luna-Mota, "Solving the optimum communication spanning tree problem", *CIRRELT Technical Report 2017-72.*

> *We present an exact algorithm to solve the optimum communication spanning tree problem. It is up to 100x faster than the state-of-the-art and proves optimality for several unsolved instances in the literature.*

Members' feedback

"Participating in MORSC activities, workshops and events, provided me with invaluable exposure to the realm of operations research, modeling techniques and solution approaches."-Bahman Borna (Concordia University)

"Besides the seminars organized by MORSC, I highlight their workshops about software used in OR and scientific writing, as well as, social activates to ease networking. I congratulate them!" -Margarida Carvalho (CERC-DS4DM, Polytechnique Montréal)

"MORSC's initiatives not only allow you to gain knowledge from experts but also to interact with them in a casual and friendly environment."– Rosemarie Santa Gonzalez (UQÀM)

"As a PhD student in OR, I really appreciate MORSC's initiative to organize events that create opportunities to meet experts in topics of interest, and to expand our network." –Teodora Dan (Polytechnique Montréal)

Jorge Cham's visit- (Creator of PHD comics)

"I guess what I loved most about the lecture was how much I identify with it as a PhD student. I think it is helpful to know that lots of students have the same doubts as me, concerning our own work and ourselves. The end message was also encouraging and gave a boost to my motivation!"- Larissa Faria (Visiting Scholar-CIRRELT)

"Writing about my research using, "xkcd" without seeing red words was the hardest challenge and knowing that I'm not alone made me relieved and less stressed. I recommend it to all graduate students."– Abeer Amayri (Concordia University)

Speed-Networking Event

"I definitely enjoyed this event, particularly the initial contacts we could make with the professionals. These contacts are valuable whether we are thinking of staying in academia or going to the job market." - Matthieu Gruson (HEC-Montréal)

CPLEX training school

"The CPLEX training school was a successful MORSC initiative that gave me good insights on how to efficiently implement mathematical models and advanced optimization techniques. I appreciate it!"- Raphael Kramer (Visiting Scholar-CIRRELT)

"Amazing experience! Even if I have been using CPLEX for so long, having IBM CPLEX experts/developers was, without question, very inspiring. They have explained to us, in a deep way, how some of the most important CPLEX callbacks work."- Luciano Costa (Polytechnique Montréal)

OR/MS writing activity

"The workshop was great. The most valuable insight that I took from it was to not short-sell your paper for less-prestigious journals; also, to start publishing young and work hard." –Mohammad Hasan Aghdaie (Concordia University)

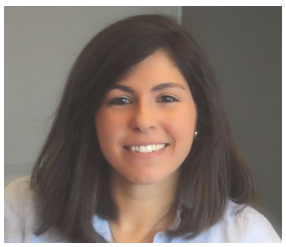
Social Events

"I really enjoyed the warm welcome from the barbecue organizers. It created a nice relaxed spirit, making it easier for me to meet "MIPers"."- Margarida Carvalho (CERC-DS4DM, Polytechnique Montréal)

"What is not to enjoy in a coffee break?! Learning about the projects by the other students in the department; having an informal chat with faculty; catching a breakfast. It is a legit pretext to laze around for one hour."- Julian Enoch (Concordia University)

The MORSC Team Leads 2017-2018

President: Gabriel Vanasse

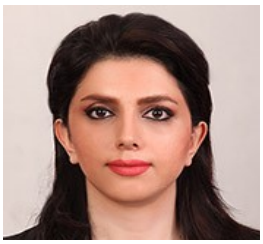


Vice-president: Hyame Alameddine

Treasurer: Golnar Kalantar

Secretary: Amir Amini

Events: Elahe Iraj



Events: Mahsa Moghaddas

Marketing: Elizabeth Gauthier

Marketing: Rosemarie Santa Gonzalez

Website: Julian Enoch

Competitions: Saif Ridad

Editing: Carlos A. Zetina

Editing: Hiba Zakane

Public Relations: Amirali Ommi

Contact us at:

or.students.montreal@gmail.com
facebook.com/ORMTLchapter
twitter.com/OR_MTLchapter

Editing: Rafik Boutouchent

2017 Collaborators

RMontreal student chapter

UNIVERSITÉ Concordia UNIVERSITY

Canadian Operational Research Society
Société Canadienne de Recherche Opérationnelle

CIRRELT

GERAD

TORCH
The Operations Research Challenge

DS4DM

informs

ECSGA
Engineering and Computer Science Graduate Association
Concordia University

IBM CPLEX

MIAE GSC
Mechanical, Industrial and Aerospace Engineering
Graduate Student Committee

Calcul Québec