



CORS • SCRO

Canadian Operational Research Society
Société canadienne de recherche opérationnelle

The Bulletin

VOLUME 54, NUMBER 2 – MAY 2020
ISSN 0315-1417

Table of Contents	Page
In This Issue	2
The 2019–2020 Council	3
President's Message	4
Council Corner	5
Announcements	5
2020–2021 CORS Council Nominees	6
OR @ Work	9
Special Interest Groups (SIGs)	12
SIG News	13
Section & Chapter News	13
Meetings and Conferences	14
The Next Issue	15
CORS Bulletin Translation Policy	15
CORS Bulletin Advertising Policy	15
CORS Mailing List	15
About CORS	16

In this Issue

Dear CORS members,

In this issue, the president's message gets right to the point with a complete rundown of how the coronavirus has impacted CORS operations, most notably the 2020 conference. Things will look very different this year, but Council attempted to preserve as much of the society's activities as possible.

Council will have some new faces this year and you can find their photos and biographies in the council section.

I have included a reprint of an OR@work article from a previous issue to showcase the diverse ways that OR can be applied in industry.

Lastly, if you have any content to submit to the bulletin, particularly if you are doing any OR work related to the outbreak, please consider submitting a write-up to andreafrriors@gmail.com.

Cheers,

Andrea

<u>Bulletin Editor</u>	Andrea Friars
<u>Elected Officers</u>	
President	Stanko Dimitrov
Vice-President	Mike Pavlin
Past-President	Mehmet Begen
Secretary	Marco Bijvank
Treasurer	Sonia Vanderby
Councillors	Anjali Awasthi (18–20), Andrea Friars (19–20) Jules Comeau, Mehmet Coskun (19–21)
<u>Standing Committees</u>	
Awards	Mike Pavlin, Jules Comeau, Mehmet Coskun
Education	Anjali Awasthi
Membership	Jules Comeau
Program	Mike Pavlin, Fredrik Ødegaard, Fatma Gzara, Timothy Chan, Mireille Faucon
Public Relations	Stanko Dimitrov
Publications	Samir Elhedhli, Elkafi Hassini, Andrea Friars
SIG Relations	Mike Pavlin, Andrea Friars, Mehmet Coskun
Section Relations	Mike Pavlin, Jules Comeau, Sonia Vanderby
Past Presidents Advisory Board	Stanko Dimitrov, Mehmet Begen
<u>Ad hoc Committees</u>	
Practice Prize	Mikael Rönnqvist
Award of Merit	Mehmet Begen, Mahmut Parlar, Mikael Rönnqvist
Student Paper Competition	Anjali Awasthi, Nadia Lahrichi, Tamon Stephen
Financial Planning	Sonia Vanderby, Mehmet Begen, Stanko Dimitrov, Mike Pavlin
Industry	Stanko Dimitrov, Anna Guinzbourg, Snezana Minic, Andrea Friars, Mehmet Coskun, Jules Comeau
Nominating	Mehmet Begen
INFOR Co-Editors	Samir Elhedhli, Elkafi Hassini
INFOR Administrator	Bev Rodgers
Travelling Speakers Program	Mehmet Begen
IFORS Representative	Marco Bijvank
Membership Services & Website Administrator	Erla Anderson

The 2019–2020 Council

CORS Council consists of the officers of the society, four councillors, the immediate past president, a representative designated by each local section and chapter of the society, SIG presidents, and the standing committee chairs. Contact information for council representatives is below. See www.cors.ca for a complete listing.

President	Stanko Dimitrov, University of Waterloo, sdimitro@uwaterloo.ca
Vice-President	Mike Pavlin, Wilfrid Laurier University, vicepresident@cors.ca
Secretary	Marco Bijvank, University of Calgary, marco.bijvank@haskayne.ucalgary.ca
Treasurer	Sonia Vanderby, University of Saskatchewan, soniavanderby@gmail.com
Past-President	Mehmet Begen, Western University, mbegen@ivey.uwo.ca
Councillor	Anjali Awasthi, Concordia University, anjali.awasthi@concordia.ca
Councillor	Andrea Friars, Agropur, andreafrriors@gmail.com
Councillor	Jules Comeau, Université de Moncton, jules.comeau@umoncton.ca
Councillor	Mehmet Coskun, Manulife / John Hancock, mehmeterdemcoskun@gmail.com
Analytics SIG	Gregory Paradis, University of British Columbia, greg.paradis@ubc.ca
Forestry SIG	Maha Ben Ali, Polytechnique Montréal, maha.ben-ali@polymtl.ca
HCOR SIG	Timothy Chan, University of Toronto, tcychan@mie.utoronto.ca
Queueing Theory SIG	David Stanford, Western University, stanford@stats.uwo.ca
Atlantic	Claver Diallo, Dalhousie University, claver.diallo@dal.ca
Québec	Irène Abi-Zeid, Université Laval, irene.abi-zeid@osd.ulaval.ca
Montréal	Nadia Lahrichi, École Polytechnique de Montréal, nadia.lahrichi@polymtl.ca
Ottawa	Dragos Calitoiu, Carleton University, calitoiu@math.carleton.ca
Kingston	Mohan Chaudhry, Royal Military College of Canada, chaudhry-ml@rmc.ca
Toronto	Hassan Anis, University of Toronto, hassan.anis@mail.utoronto.ca
Southwest Ontario	Joe Naoum-Sawaya, Western University, jnaoum-sawaya@ivey.ca
Saskatoon	Hamed Samarghandi, University of Saskatchewan, samarghandi@edwards.usask.ca
Calgary	Owen James, Associated Engineering, jameso@ae.ca
Edmonton	Armann Ingolfsson, University of Alberta, armann.ingolfsson@ualberta.ca
Vancouver	Stuart Donald, University of British Columbia, stuart.donald@sauder.ubc.ca
Waterloo Student	Khaled Shah, University of Waterloo, khaled.mostafa.shah@uwaterloo.ca
Québec Student	Irène Abi-Zeid, Université Laval, irene.abi-zeid@osd.ulaval.ca
Montréal Student	Gabriel Vanasse, Concordia University, or.students.montreal@gmail.com
Toronto Student	Kyle Booth, University of Toronto, kyle.booth@mail.utoronto.ca Christopher Sun, University of Toronto, christopher.sun@mail.utoronto.ca
Winnipeg	Currently vacant



President's Message

Greetings Fellow CORS members,

I trust all of you are keeping healthy and safe in these turbulent times. Looking back at my most recent bulletin message it is surprising to think what can happen in three months.

Most areas of our lives have been impacted by the COVID-19 pandemic. CORS is no exception. I am sure many of you are aware the CORS 2020 annual conference is postponed to spring of 2021. This decision cascades into other aspects of CORS. For example, the CORS 2021 joint conference with Optimization Days will not take place, and instead the postponed 2020 conference will take place in Toronto in 2021. I like to acknowledge the help, support, and great efforts of Fatma Gzara and Timothy Chan on working to address the impact of the COVID-19 pandemic on the CORS 2020 conference. I also hope CORS can have a joint conference with Optimization Days in the future, as the two organizations have great overlap in areas of interest and membership. Some more immediate consequences of postponing the CORS 2020 annual conference are 1) the student paper competitions are moved online and 2) the Annual General Meeting (AGM) will now take place online on Tuesday, June 9, at 12:00 PM EDT.



The student competition cannot run without the efforts of the competition organizers. I thank Nadia Lahrichi, open category competition organizer, and Tamon Stephen, undergraduate category competition organizer, for their willingness to rework the student paper competitions and move each competition entirely online. Each will provide paper competition participants with information regarding the competition.

CORS council had an emergency meeting to discuss consequences regarding the postponement of the 2020 annual conference; I thank all council members for making themselves available on short notice. One of the points discussed is the AGM. In accordance with By-Law No. 8(a) and 8(b) council decided to have the CORS AGM for 2020 on Tuesday, June 9, at 12:00 PM EDT via an online meeting. The selected time and date correspond to the approximate time the AGM would have taken place during the planned 2020 conference. Details on how to join the online AGM will be sent to the CORS email list in early June.

As this is the last bulletin message prior to the AGM, please let me know if you'd like to meet and discuss any issues. I hope you all keep well, safe, and healthy!

Sincerely,

Stanko Dimitrov

Stanko Dimitrov



Council Corner

Council held meetings to determine the best course of action for the 2020 conference in Toronto and concluded that it would be postponed to 2021. This decision necessitated a series of subsequent discussions about how to handle the CORS awards, AGM, and other council meetings that typically take place during the conference. The AGM will continue as planned through an online forum, at which point announcements will be made about the CORS awards winners for 2020.

Announcements

It's time to renew your CORS membership

The website is ready to accept payment of membership fees for **April 1, 2020 to March 31, 2021**. You may be able to use an NSERC grant to pay CORS membership dues. Renew your membership at (http://www.cors.ca/sites/cors_php/en/membership/renewal.php). If you have questions, contact Membership Services at members@cors.ca

Access the journal INFOR

Current members receive an email message from Taylor and Francis with instructions to access the journal INFOR. If you have questions, contact Membership Services at members@cors.ca

CORS Funding Opportunities

Traveling Speakers Program (TSP)

The TSP enables local sections to bring Canadian OR practitioners / researchers as speakers to their local events. In order to keep costs in line while maximizing the CORS national profile, CORS sponsorship will be limited to 50% of the total expenses, up to a maximum of \$500 per speaker or \$1000 for a single event (conference, workshop). Other expenses can be covered by the local section. The program of the event must acknowledge the contribution of CORS. Each local section must contact the TSP coordinator to obtain approval for funding preferably at least one month in advance of the event date. Payment will be made by the CORS Treasurer upon receipt of the expense form (<https://www.cors.ca/sites/default/files/documents/expenses.docx>).

Applicants fill out the application form (<https://www.cors.ca/sites/default/files/documents/tsp.docx>) and submit to:

Mehmmet Begen, TSP Coordinator (mbegen@ivey.uwo.ca)

2020–2021 CORS Council Nominees

President by acclamation

Michael Pavlin

Assistant Professor
Wilfrid Laurier University

Michael Pavlin is an assistant professor in the School of Business and Economics at Wilfrid Laurier University. He received his Ph.D. in Operations Management and M.Sc. in Computer Science from the University of Toronto. He also holds a B.Sc. from the University of British Columbia. Prior to joining Wilfrid Laurier University, he was a postdoctoral researcher at the University of Chicago. Michael's research uses game theory and structural econometrics to study applications in services, supply chains and energy markets. His work has been published or accepted at M&SOM, Financial Management and Management Science and has been funded by SSHRC and MITACS. His teaching focuses on business analytics.



Vice-President by acclamation

Jules Comeau

Professor
University of Moncton

Jules Comeau is an assistant professor of operations management in the Faculty of business at Université de Moncton. He received his Ph.D. in industrial engineering from Dalhousie University. His research involves the use of approximate optimization and machine learning techniques to solve stochastic problems in forestry and finance. His peer-reviewed publications include international conferences and journals such as Canadian Journal of Forest Research, and Financial Markets and Portfolio Management. He is currently the CORS diploma coordinator for Université de Moncton and has been a long time CORS member, first as a student and subsequently as a professor. Fluently bilingual, his experience as a board member of several non-profit organisations has helped him contribute positively to CORS as a Councillor since 2017.





Secretary by acclamation

Marco Bijvank

Assistant Professor
University of Calgary



Marco Bijvank is an assistant professor of Operations and Supply Chain Management at the Haskayne School of Business, University of Calgary. He holds an M.Sc. in Business Mathematics and Informatics (graduated Cum Laude) and a Ph.D. from the VU University Amsterdam. He has been a visiting scholar at Aarhus University, Denmark, post-doctoral researcher at the University of Montreal, and Assistant Professor at the Rotterdam School of Management, Netherlands. The two main research interests of Marco are supply chain management (in particular, inventory management and retail operations) and healthcare operations (in particular, emergency department operations). However, he also has an interest in pricing and revenue management. His research is supported by various grants from the University of Calgary and NSERC. He has served the CORS Calgary Chapter as secretary since 2016 and as vice-president since 2017. He was program co-chair for CORS 2016 in Banff.

Treasurer by acclamation

Gregory Paradis

Post-doctoral Research Fellow, University
of British Columbia



Greg is a Postdoctoral Research Fellow in the Department of Forest Resources Management, Faculty of Forestry, at the University of British Columbia. He received his PhD in forest science from Université Laval. He has been actively promoting application of OR to forest sector decision problems for almost 20 years now. Greg founded the CORS Forestry Special Interest Group (FSIG) in 2012, serving as president and past president of the FSIG from 2012 to 2015. He served as guest editor for a forestry-themed special issue of INFOR (published in 2016), which was published as a hard-cover book by Taylor & Francis in 2018. He founded the CORS Analytics Special Interest Group (ASIG) in 2019, and currently serves as president of that group. Greg has attended over 10 CORS annual conferences since 2001 and continues to play a leadership role in the FSIG and ASIG cluster organization at annual CORS meetings. Greg has several years administrative leadership experience, both as co-owner of several small businesses and as a volunteer board member for professional, academic, and commercial associations. He is looking forward to serving CORS Council as Treasurer.



Councillor by acclamation (2019–2021)

Mehmet Erdem Coskun

Senior Data Scientist

Operations Optimization & Decision Analytics

Manulife / John Hancock

Mehmet Erdem Coskun is a PHD candidate in Computational Engineering and Science at McMaster University. He holds a Master of Applied Science in Computational Engineering and Science from McMaster and a Bachelor of Engineering in Industrial Engineering from Yildiz Technical University, Istanbul, Turkey.



Councillor by acclamation (2020-2022)

Samira Abbasgholizadeh Rahimi



Councillor by acclamation (2020–2021)

Sonia Vanderby

Councillor by acclamation (2020-2022)

Majid Taghavi

Assistant Professor

Saint Mary's University

Majid Taghavi is an Assistant Professor of Management Science at the Sobey School of Business, Saint Mary's University. He is also an Adjunct Professor in the Department of Industrial Engineering and the School of Health Administration at Dalhousie University. His research interest lies in applying stochastic optimization techniques to operational problems in areas such as healthcare and transportation. He holds a Ph.D. in Management Science from the DeGroote School of Business at McMaster University. His research has been funded by NSERC and Research Nova Scotia. He has been involved in various CORS activities since 2017. He served as the healthcare cluster chair and co-chair for three CORS annual conferences (2018-2020) and served in the organizing committee for the CORS 2018 annual conference. He is currently finishing his second year as the track organizer of the healthcare SIG.





OR @ WORK

Scheduling Employees in Quebec's Liquor Stores with Integer Programming

Bernard Gendron, Ph.D.
Université de Montréal

Re-published from the CORS Bulletin, February 2005

The SAQ (in French, "Société des alcools du Québec") is a public corporation of the Province of Quebec responsible for distributing and selling alcohol-based products on its territory, through a large network of more than 400 stores. Every week, the SAQ has to generate the working schedules of more than 3000 employees. Until 2002, this process was handled manually, incurring estimated annual salary expenses of almost 1,000,000\$. This manual process was generating a great number of errors, because of the inability of the personnel to produce solutions that would respect all the complex rules of the union agreement. As a result of having to deal with the complaints filed by the employees, the company estimates it had to pay an annual cost of approximately 300,000\$. After a careful examination of the available computer-based workforce scheduling products, the company realized that none of them would properly handle their specific union agreement rules.

It is in this context that I was approached to develop a solution engine that would interact with a homemade Web-based database system to produce the desired schedules. Integer programming (IP) was the methodology of choice, as implemented in a state-of-the-art IP software package (ILOG CPLEX). This choice allows the development of a robust program that produces optimal schedules, i.e., schedules that strictly adhere to all union agreement rules.

Although it often happens that complex personnel scheduling problems cannot be dealt with using "compact" IP formulations (most notably in the airline industry), this application is quite different, since the scheduling problem decomposes by employee. This is so, because the union agreement imposes a sequential assignment: the most senior employee is assigned the best schedule, then, using the remaining shifts, a schedule is generated for the second most senior employee, and so on. This sequential process is guaranteed to produce a feasible schedule, as there are always enough employees on the availability list to fill the requirements of each store (thus, there is no need to backtrack on prior schedules). In spite of this interesting feature, formulating the problem for each employee is a challenging task. In particular, one rule allows every shift of at least 6 hours to be split between two employees. Alone, this rule can be formulated relatively easily using IP, but when coupled to another rule that forces each employee to take a one-hour unpaid lunch/dinner break, it produces complex situations. I had to take into account several other complicating rules: there are multiple tasks across multiple stores assigned to each employee (thus, there are travel time constraints between stores); in addition to maximizing the number of work hours, several secondary objectives need to be considered; there are limits on daily and weekly work hours; etc.



I programmed a C++ code that interacts with the Web-based database system developed by the SAQ to acquire the data for each employee. The SAQ system creates three data files representing, respectively, the shifts that can be assigned to the employee, the availabilities and preferences of the employee, and a list of parameters (daily and weekly limits on the number of work hours, limit on the number of discontinuities, etc.), which are fixed and identical for each employee. The last data file is provided to help analyze the impact of changes in the current values of these parameters, and to easily adapt the program in case some values are modified. The C++ code implements the mathematical model using ILOG Concert Technology and then solves the IP formulation with ILOG CPLEX. I calibrated the parameters of CPLEX to optimize performance. I could observe one striking example of the effect of fine tuning CPLEX parameters when I was able to reduce the time taken by CPLEX (version 7.1) on a particular instance from 20 minutes to 20 seconds.

Most schedules are obtained very quickly (a few minutes at most). However, for some senior employees working in large subdivisions with many stores, the IP models can take hours before they are solved. Usually, the number of splittable shifts is a good indicator of the difficulty of the problems; typically, if one day contains more than 10 splittable shifts, the resulting model will be very hard to solve. In order to produce the schedule on time every week, the SAQ has acquired two CPLEX licenses and has implemented a simple queueing system that ensures that no more than one of these difficult instances is solved at every time.

Typically, the data is entered in every store on Wednesday night, and the schedule is communicated to the employees on Thursday (sometimes, Friday morning). Three employees dedicate part of their time to the project: one computer analyst who ensures the maintenance of the database and interface system, and updates the CPLEX versions; one employee from the human resources department and one representative of the union, who ensure that all rules of the union agreement are respected and answer the questions coming from the store managers and the employees regarding the schedules produced by the system.

The project started in March 2000, when the consultant in charge of implementing the Web-based database system approached me to see if I could produce a complete solution to the scheduling problem. My early developments focused on modeling the splittable shifts. I produced a first release of the C++ code in May 2000. I then discovered several difficulties related to the interaction of split shifts and unpaid breaks; I fixed these problems in the following months. After 13 releases involving multiple bug fixes, I released version 1.0 in December 2000: the format of the data files was very close to the actual one and most rules were implemented. Between December 2000 and July 2001, I produced 11 other releases, and then developed version 3.0: it included several rules that were not in the previous versions. After 12 other minor releases, I produced version 4.0 in August 2002; it allows to stop the execution after some time and to restart it later by using the schedule generated so far for that employee. This feature is used by the queueing system developed by the SAQ to make sure that no single employee becomes a bottleneck to the generation of the whole scheduling process. That same month, I released Version 5.0, compatible with CPLEX version 8.0. The system was also implemented in all stores across the Province of Quebec during the Summer 2002. The current version is 5.9, released in July 2004.

The project has contributed in many ways to increase the efficiency of the organization, by reducing the costs of producing the schedules and by improving the management of human resources. The savings in salaries, as a result of replacing manual generation of the schedules by an automated process, are estimated to more than 750,000\$ annually (about 80% of the total



prior salary expenses). In addition, because the schedules produced by the program are very accurate and respect all rules of the union agreement, very few complaints are made by the employees; this translates into annual savings estimated at about 250,000\$ (90% of the total prior expenses related to the employees' complaints). Overall, the automated scheduling has generated annual savings estimated to more than 1,000,000\$. Since the cost of developing the new scheduling system (over 2.5 years) is around 1,300,000\$, the payback period is less than two years.

The implementation of the system in the stores has greatly simplified the work of the managers and union representatives, by eliminating paperwork, by simplifying the management of the data and, overall, by reducing the time dedicated to the scheduling task. As an additional result of the project, the union agreement rules are now interpreted in a uniform way in all stores across the Province, which was not the case before; this eliminates many complaints made by the union representatives, that occurred prior to the implementation of the system.





CORS Special Interest Groups

CORS Council approved a policy on Special Interest Groups (SIGs). A SIG provides a mechanism to promote CORS, the SIG area and the SIG members, as well as the opportunity for CORS members with common interests to interact and network.

Analytics SIG

Gregory Paradis (greg.paradis@ubc.ca)
University of British Columbia
www.cors.ca/SIG/Analytics

Forestry SIG

Maha Ben Ali (maha.ben-ali@polymtl.ca)
Polytechnique Montréal
www.cors.ca/SIG/Forestry

Health Care Operational Research SIG

Timothy Chan (tychan@mie.utoronto.ca)
University of Toronto
www.cors.ca/SIG/HCOR

Queueing Theory SIG

David Stanford (stanford@stats.uwo.ca)
Western University
www.cors.ca/SIG/Queueing

If you would like to join a SIG, contact the people listed above, or indicate that you would like to join when you renew your CORS membership.

CORS encourages members with common interest in an area within or related to operational research to form additional SIGs. More information about SIGs can be found online at www.cors.ca/?q=content/communities

If you are interested in forming a SIG in a particular area, contact:

Mike Pavlin, SIG Committee chair (vicepresident@cors.ca)

SIG News

Health Care OR

The CORS Health Care Operational Research SIG oral presentation competition and the CHOW paper competition are both cancelled this year. The two competitions are rescheduled to take place next year at the CORS 2021 conference in Toronto.

Section and Chapter News

SW Ontario

Workshop on Smart Cities Optimization

A workshop on Smart Cities Optimization was held at the Fields Institute in Toronto on January 10, 2020 and was organized by Dr. Bissan Ghaddar and Dr. Joe Naoum-Sawaya. This event was sponsored by Western University, Ivey Business School, the Social Sciences and Humanities Research Council of Canada and the Southwestern Ontario Section of CORS. The audience included faculty members, students, and industry participants. After the welcome note of the Fields Institute Director, Prof. Kumar Murty, Prof. Ann Melissa Campbell presented a talk on “The Use of Autonomous Vehicles for Last Mile Deliveries”. Prof. Siqian Shen presented a talk entitled “New Results of Facility Location involving Competition, Prioritization, or Ambiguous Decision-dependent Uncertainty”, followed by Prof. Wei Qi who presented a talk on “Citywide Mobility-Energy Orchestration: From Shared Electric Vehicles to Self-Sufficient and Resilient Microgrids”. After the lunch break, Prof. Pascal Van Hentenryck presented a talk entitled “Socially Aware Mobility Systems”, followed by Prof. Olivier Bahn who presented a talk on “Smart Cities Optimization to Contribute to Climate Change Mitigation”. The day was concluded by a talk by Prof. Chris Beck entitled “The Senior Transportation Problem and Multi-Commodity Pickup-and-Delivery” and a talk by Prof. Ola Jabali entitled “Using Electric Vehicles in Logistics Activities”.

The organizers would like to thank the Fields Institute for all their help and assistance in organizing and hosting this event.

A recording of the presentations is available at <https://www.fields.utoronto.ca/video-archive/event/2882>





Meetings and Conferences

CORS Business Meetings

May 29, 2019	CORS Council Meeting, Saskatoon, Sask.
Sep 20, 2019	CORS Council Meeting, Teleconference
Nov 29, 2019	CORS Council Meeting, Teleconference
Jan 24, 2020	CORS Council Meeting, Toronto, Ont.
Mar 20, 2020	CORS Council Meeting, Teleconference
May 8, 2020	CORS Financial Planning Committee Meeting
Jun 3, 2020	CORS Council Meeting, Teleconference
Jun 8, 2020	CORS Council Meeting with SIGs, Sections, and Chapters, Teleconference
June 9, 2020	CORS AGM, Teleconference

CORS Annual Conferences

2021	CORS Annual Conference, Toronto, Ont.
2022	CORS joint with INFORMS International, Vancouver, B.C.

WWW Conference Listings

CORS: www.cors.ca/?q=content/cors-annual-conferences

INFORMS: <https://www.informs.org/Meetings-Conferences>

IFORS: www.ifors.org/web

Netlib Conference Database: <ftp://ftp.cc.ac.cn/netlib/confdb/Conferences.html>

SIAM: www.siam.org/meetings/calendar.php

POMS: <https://pomsmeetings.org>

EURO: www.euro-online.org/web/pages/460/calendar



The Next Issue

The next issue of the Bulletin is scheduled to appear in **August**. Along with the regular features and news from the local sections, it will include more information about the next CORS Annual Conference. Contributions to this issue, especially news on the activities of local sections or CORS members, should be submitted by **July 24, 2020** to:

Andrea Friars
Editor, CORS Bulletin
11 Sawgrass Drive
Oakfield, NS B2T 0G1
Email: AndreaFriars@gmail.com

The preferred method of submission is by an MS Word attachment to an email.

CORS Bulletin Translation Policy

Items that are CORS business will be translated into English and French. All other items will be published in the language they are submitted in.

CORS Bulletin Advertising Policy

Ads cost \$120 per page, proportional for fractional pages. Logos and prepared layouts can be accommodated. This fee also includes distribution of the advertisement on the CORS Mailing List. Direct inquiries to the Editor.

CORS Mailing List

As a benefit of membership, members may use the CORS Mailing List to transmit messages, announcements, and job postings to the entire membership or to a targeted subgroup such as a local section. For example, you can send

- messages regarding the activities and business of the society;
- announcements about conferences, conference sessions, special journal issues, seminars or other activities provided that these are related to operational research in its broadest sense;
- job postings of general interest to CORS members.

The Mailing List is not used for commercial purposes, and all messages are vetted before they are sent out. To submit items to the Mailing List, email CORS Membership Services at members@cors.ca

For non-members, a fee of \$60 is charged for the distribution of job postings and other announcements or messages of interest to the CORS membership.



The **Canadian Operational Research Society** was founded in 1958. Its goal is to advance the theory and practice of OR and to stimulate and promote contacts between people interested in the subject.

Publications: A quarterly scientific journal called *INFOR* and a news *Bulletin*.

Meetings: An annual national conference with an award ceremony, occasionally organized jointly with an international society (IFORS, INFORMS), and numerous local events organized by local sections.

Local Sections & Chapters: CORS has twelve local sections located throughout Canada and four student chapters.

Awards and Prizes: CORS presents the following annual awards and prizes at its conference:

Award of Merit for significant contributions of a present or past member of CORS to the profession of OR.

Harold Larnder Award to an individual who has achieved international distinction in OR.

Omond Solandt Award to an organization, private or governmental, that is deemed to have made an outstanding contribution to OR in Canada.

Practice Prize for the challenging application of the OR approach to the solution of applied problems.

Eldon Gunn Service Award for outstanding contributions of time and service to the society.

Student Paper Competition to recognize the contribution of a paper either directly to the field of OR through the development of methodology or to another field through the application of OR.

Graduate Student Funding: CORS encourages attendance of graduate students at its conference by providing partial funding. Visit CORS website for details.

CORS Diploma: This diploma is awarded to students graduating from a university curriculum comprising several OR courses. Criteria may be found on the CORS website.

Membership Directory: An online directory of CORS members is available as a membership benefit.

To join CORS: Go to the CORS website and join online by credit card using the form found under membership or complete the PDF application form found on the CORS website and mail it with payment to the address below.

Fees: Member \$110; Retired Member \$55; Student Member \$45 (including post-doctoral fellows)

Website: www.cors.ca

INFOR: www.tandfonline.com/loi/tinf20

LinkedIn: www.linkedin.com/company/canadian-operational-research-society

Twitter: @CORS_President