



CORS • SCRO

Canadian Operational Research Society
Société canadienne de recherche opérationnelle

The Bulletin

VOLUME 53, NUMBER 3 – AUGUST 2019
ISSN 0315-1417

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IN THIS ISSUE

Dear CORS members,

In This Issue, we hear from Mehmet Begen as he wraps up a successful year as CORS president. Stanko Dimitrov will step in to fill the role, and he addresses his plans for CORS this year in his incoming president's message. Both messages mention the importance of the CORS council and supporting roles in the society. The bulletin also includes a summary of the members that make up this year's council.

The conference in Saskatoon was held at the end of May, and as usual, the August issue is filled to the brim with highlights, photos and write ups on the prize winners, and details for next year's competitions. The 2020 conference will be in Toronto, ON, and the first conference promo will give you a peek into what is to come.

You will also find the budget breakdown for next year, and the membership report.

As always, if you have content you would like to see in the next bulletin, please submit it to me at AndreaFriars@gmail.com

Cheers,

Andrea Friars

Bulletin Editor

Andrea Friars

Elected Officers

President
Vice-President
Past-President
Secretary
Treasurer
Councillors

Stanko Dimitrov
Mike Pavlin
Mehmet Begen
Marko Bijvank
Sonia Vanderby
Anjali Awasthi (18–20), Andrea Friars (19–20)
Jules Comeau, Erdem Coskun (19–21)

Standing Committees

Awards

Mike Pavlin, Jules Comeau, Erdem 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, Erdem Coskun

Section Relations

Mike Pavlin, Jules Comeau, Sonia Vanderby

Past Presidents
Advisory Board

Stanko Dimitrov, Mehmet Begen

Ad hoc Committees

Practice Prize

Mikael Rönnqvist

Award of Merit

Mehmet Begen, Mahmut Parlar,
Mikael Rönnqvist

Financial Planning

Sonia Vanderby, Mehmet Begen,
Stanko Dimitrov, Mike Pavlin

Industry

Stanko Dimitrov, Anna Guinzbourg,
Snezana Minic, Andrea Friars,
Erdem Coskun, Jules Comeau

Nominating

Mehmet Begen

INFOR Co-Editors

Samir Elhedhli, Elkafi Hassini

INFOR Administrator

Bev Rodgers

Student Paper
Competition

Anjali Awasthi, Nadia Lahrichi,
Tamon Stephen

Travelling Speakers
Program

Mehmet Begen

IFORS Representative

Marko 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, 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, mpavlin@wlu.ca
Secretary	Marco Bijvank, University of Calgary, marco.bijvank@haskayne.ucalgary.ca
Treasurer	Sonia Vanderby, University of Saskatchewan, sonia.vanderby@usask.ca
Past-President	Mehmet Begen, Western University, mbegen@ivey.uwo.ca
Councillor	Anjali Awasthi, Concordia University, anjali.awasthi@concordia.ca
Councillor	Andrea Friars, Agropur, andreafrs@gmail.com
Councillor	Jules Comeau, Université de Moncton, jules.comeau@umoncton.ca
Councillor	Erdem Coskun, Manulife / John Hancock, mehmeterdemcoskun@gmail.com
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	Vahid Sarhangian, University of Toronto, sarhangian@mie.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	Danielle Ripsman, University of Waterloo, daripsman@uwaterloo.ca
Québec Student	Irène Abi-Zeid, Université Laval, irene.abi-zeid@osd.ulaval.ca
Montréal Student	Carlos Armando Zetina, Concordia University, c_zetina@encs.concordia.ca
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



RECENT CHANGES TO COUNCIL AND COMMITTEES

Post	Previous	New
Council		
President Vice-President Past-President Secretary Treasurer Councillors	Mehmet Begen Stanko Dimitrov Dionne Aleman Peter VanBerkel Sonia Vanderby Bora Kolfal, Jules Comeau, Anjali Awasthi, Marco Bijvank	Stanko Dimitrov Mike Pavlin Mehmet Begen Marco Bijvank Sonia Vanderby Jules Comeau, Erdem Coskun Anjali Awasthi, Andrea Friars
Standing Committees		
Awards Education Membership Program Public Relations Publications Past Presidents Advisory Board SIG Relations Section Relations	Stanko Dimitrov, Jules Comeau, Marco Bijvank Anjali Awasthi Bora Kolfal Stanko Dimitrov, Corinne MacDonald, Peter VanBerkel, Fredrik Ødegaard, Kent Kostuk Dionne Aleman Samir Elhedhli, Elkafi Hassini, Andrea Friars Stanko Dimitrov, Jules Comeau, Marco Bijvank Stanko Dimitrov, Marco Bijvank Stanko Dimitrov, Bora Kolfal, Marco Bijvank, Sonia Vanderby	Jules Comeau, Erdem Coskun Anjali Awasthi Jules Comeau Mike Pavlin, Fredrik Ødegaard, Fatma Gzara, Timothy Chan, Mireille Faucon Stanko Dimitrov Samir Elhedhli, Elkafi Hassini, Andrea Friars Stanko Dimitrov, Mehmet Begen Mike Pavlin, Andrea Friars, Erdem Coskun Mike Pavlin, Jules Comeau, Sonia Vanderby
Ad hoc Committees		
Practice Prize Student Paper Competition Award of Merit Financial Planning Analytics Industry Nominating Travelling Speakers Program INFOR Co-Editors Bulletin Editor IFORS Representative	Mikael Rönqvist Nadia Lahrichi, Tamon Stephen Dionne Aleman, Mahmut Parlar, John Chinneck Sonia Vanderby, Dionne Aleman, Mehmet Begen, Stanko Dimitrov Jules Comeau Dionne Aleman, Fredrik Ødegaard Dionne Aleman Dionne Aleman Samir Elhedhli, Elkafi Hassini Andrea Friars Peter VanBerkel	Mikael Rönqvist Anjali Awasthi, Nadia Lahrichi, Tamon Stephen Mehmet Begen, Mahmut Parlar, Mikael Rönqvist Sonia Vanderby, Mehmet Begen, Stanko Dimitrov, Mike Pavlin ----- Stanko Dimitrov, Anna Guinzbourg, Snezana Minic, Andrea Friars, Erdem Coskun, Jules Comeau Mehmet Begen Mehmet Begen Samir Elhedhli, Elkafi Hassini Andrea Friars Marco Bijvank



OUTGOING PRESIDENT'S MESSAGE



Dear friends, colleagues and students,

Thank you for giving me the opportunity to serve CORS as the president. I have been delighted and honored to serve CORS for the last seven years. It has been rewarding and a great learning experience for me.

Let me list a few of the CORS council's activities and updates over the last year:

- Our 4th SIG, Analytics (a new addition to our queueing, healthcare, and forestry SIGs) was established and started its activities.
- To have more momentum and connection with industry and the analytics SIG, we formed an industry committee that consists of CORS Council members from industry and two more practitioners outside.
- We are trying to make CORS, chapter and section reporting, and operations more transparent as well as standardized. We have been streamlining some of our reporting and accounting practices. We have introduced by-laws to achieve these goals.
- We now have a list of all OR and related programs in Canada on the CORS website, and we'll do our best to maintain it. Usually newcomers to Canada as well as students/people looking for schools request this information.



The CORS council and conference organizers are working towards the next three conferences. We hope to keep the momentum with some of the new initiatives at the conferences, such as CHOW (Canadian Healthcare Optimization Worksop) and the analytics day.

Our journal INFOR has been going strong; please consider submitting your papers to INFOR.

We are thinking of new ideas/proposals for paper competitions (e.g., new categories), CORS fellows, funding opportunities, sponsorships, and more. We are all ears for your feedback, new ideas, and changes you want to see.

Please be involved with CORS: conference organization, SIGs, chapters/sections, council, paper competitions, submitting your work to INFOR.

As I conclude, I ask the following question. Can an orchestra play without a conductor? I do not know the answer, but a few comedians (such as Danny Kaye) showed that an orchestra can sometimes play without a conductor. I can tell you that CORS can operate without a president, as the CORS council makes things easy, organized, and handles most of the work.

Many thanks are in order. There are many activities happening behind the scenes for CORS and the conference, e.g., budget preparation, future conference planning, student funding allocations, paper competition reviews, awards selection, membership renewals, SIG activities, section/chapter activities, INFOR operations, CORS bulletin editorship, CORS admin tasks, conference program scheduling, and more. I am grateful to CORS Council members, competition chairs and judges, conferences organizers, SIGs/Sections/Chapters, CORS admin, CORS bulletin editor, INFOR Editors/reviewers, volunteers, and anyone else who has been involved in the many CORS activities, for their dedication, hard work and making it all happen. Thank you all.

Finally, I would like to thank you, CORS members, for your continued support and for attending the conference. See you all at CORS 2020 in Toronto.

Mehmet A. Begen



INCOMING PRESIDENT'S MESSAGE



Greetings Fellow CORS members,

It is with great privilege and honor that I step into the role of CORS/SCRO president for the 2019–2020 council. I learned a lot from the past president Dionne Aleman and outgoing president Mehmet A. Begen, and I thank them for their past – and future – help along with their contributions to CORS in their many years of involvement with the society.

A society such as CORS can only function with a dedicated team of individuals helping organize various events, publications, competitions, and awards. During the 2019–2020 council, Mehmet A. Begen and I will be joined by Vice President Michael Pavlin; Secretary Marco Bijvank; Treasurer Sonia Vanderby; Publications Chair Elkafi Hassini; and Councilors Anjali Awasthi, Mehmet Erdem Coskun, Andrea Friars, and Jules Comeau. I look forward to working closely with them in the coming year. The names listed are only a small number of the individuals that help CORS run smoothly. There are conference organizers, journal and bulletin editors, special interest groups with officers, paper competition organizers and judges, to name a few examples. I thank all of them for their help, and I hope that you will either remain involved or get involved with the aspect of CORS that appeals to you, in the future.



This year's conference was fantastic! A great job was done by the conference organizers, volunteers, and attendees. I greatly enjoyed my time in the prairies and look forward to the next CORS conference in the prairie provinces, though it will not be next year. Next year, the CORS conference will take place in Toronto. I look forward to seeing you there!

Between now and the next conference, I will explore additional services that CORS can provide to its membership. For example, I am interested in identifying new ways to serve our student members, in addition to our existing student competitions and funding opportunities. Similarly, I look forward to discussing innovative ways that CORS can support all members.

If you have ideas or thoughts on what additional services CORS can provide to help you or a group of members, then please reach out. I look forward to receiving your feedback.

Enjoy the remainder of summer,

Stanko Dimitrov

Stanko Dimitrov



ANNOUNCEMENTS

It's time to renew your CORS membership

The CORS website is ready to accept payment of membership fees for **April 1, 2019 to March 31, 2020**. 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)



CORS 62nd Annual Conference Toronto, Ontario June 8–10, 2020

Uwaterloo.ca/CORS2020

The CORS 62nd annual conference will be held at the Marriott Downtown at CF Eaton Center in the vibrant city of Toronto – renowned for everything from its ethnic neighbourhoods to its role as the financial centre of Canada.

If you would like to experience arts and culture – check out the Royal Ontario Museum, the Art Gallery of Ontario, or the BATA Shoe Museum.

Sports fans in Toronto are truly fanatics, and you can revel in the Canadian love of sport at a Jay's game, watching the Raptors, or Toronto FC – and Toronto Leafs fans will be hoping their team is still on the ice in June! Don't forget the Hockey Hall of Fame; its exhibits and interactive games are regularly updated and are fun for all ages.

If dining out is more your style – you are spoiled for choice. From international cuisine of every variety to local delicacies with Indigenous cuisine, Toronto offers overwhelming variety for enjoying a good meal.

The conference brings together OR/MS academics and practitioners from Canada and abroad. It boasts intriguing plenary presentations, tutorials, hundreds of oral presentations, and several competitions. In addition, the conference is home to the Canadian Healthcare Optimization Workshop and Analytics Day.

We look forward to seeing you in Toronto, June 8-10, 2020!

Fatma Gzara, CORS 2020 Conference Chair

Timothy Chan, Program Chair

Abstract submissions coming soon

Check the conference website for deadlines, program committee, and cluster chairs.

Sponsorship opportunities are available

Contact the conference chair at fgzara@uwaterloo.ca for the sponsorship package.



Tenure-Track Faculty Position in Management Analytics

Smith School of Business at Queen's University (Kingston, Ontario, Canada) invites applications for a tenure-stream position in Management Analytics (formerly, Management Science and Operations), with preference for entry (Assistant Professor) level, and with a preferred starting date of July 1, 2020. The position is flexible in focus, and can be oriented either toward more "classical" Operations Management and Management Science, or toward Machine Learning and Artificial Intelligence; scholars with all methodological and conceptual interests in the topics (e.g., Ethics in AI) are invited to apply.

Qualifications

Candidates must have a PhD, or be near completion. The successful candidate will exhibit strong potential for innovative and high quality scholarly research leading to top-tier peer-assessed publications, as well as for outstanding teaching contributions and an ongoing commitment to academic and pedagogical excellence, in support of the School's various public and private programs. The successful candidate will also be expected to make contributions through service to the School, the University, and/or the broader academic community.

Compensation

Salary will be commensurate with qualifications and experience. Appointees have access to substantial internal funds both for research and course development through Smith School of Business Research Program and our Faculty Development Fund. The School also provides faculty members with support in their applications to external research granting agencies such as the Social Sciences and Humanities (and/or Natural Sciences and Engineering) Research Councils of Canada, among others. Smith School of Business faculty members, including those in Management Analytics, have been quite successful with external research grant competitions.

Institution

Queen's University has a long and rich tradition of academic excellence, dating back to a royal charter granted by Queen Victoria in 1841. Smith School of Business is one of the world's premier business schools, with an outstanding reputation for innovation and quality. Our MSc and PhD programs in Management attract highly qualified research-oriented students in many fields of study. Our undergraduate Commerce program has among the highest entrance standards in Canada and is widely viewed as the country's best undergraduate business program. Queen's has gained international recognition for its MBA and executive education programs and is fully accredited by AACSB and EQUIS. Smith School of Business is also home to centres focused on analytics, corporate governance, entrepreneurship and innovation, and social impact. The learning environment at Queen's is supported by outstanding library and computing facilities (e.g., <https://cac.queensu.ca/>) More information can be found at:



<https://smith.queensu.ca/index.php>, and general information about our faculty members is here:
https://smith.queensu.ca/faculty_and_research/index.php

Management Analytics group

The Management Analytics group (formerly, Management Science and Operations Management) is comprised of strong researchers with particular expertise in revenue management and pricing, sustainability, energy markets, supply chain management and the interface of operations and marketing. Group members hold top editorial board memberships and have won multiple prizes and awards.

The Management Analytics group is at the forefront of the Analytics/Big Data/AI revolution with a portfolio of highly successful programs delivered out of the Smith location in downtown Toronto. These include the highly regarded Masters in Management Analytics (MMA, https://smith.queensu.ca/grad_studies/mma/index.php), North America's first Masters in Management of Artificial Intelligence (MMAI, https://smith.queensu.ca/grad_studies/mmai/index.php), delivered jointly with Geoffrey Hinton's Vector Institute for Artificial Intelligence (<https://vectorinstitute.ai>), and multiple Executive Education programs in Analytics.

The group is also actively involved in industry collaborations, primarily in financial services, through the Scotiabank Center for Customer Analytics, <https://smith.queensu.ca/centres/scotiabank/index.php>, and is otherwise tightly embedded in Toronto's booming Analytics/AI scene.

The Cit(ies)

Smith School of Business operates in two locations:

Our main campus is in Kingston, Ontario – a unique Canadian city of 125,000 with a distinct blend of history, recreation, industry and learning. Situated on the shores of Lake Ontario, Kingston offers unique waterfront living with many recreational and cultural opportunities. It is within a 2h train ride (~2.5-3h drive) to the commercial, industrial and political hubs of Toronto, Montreal, and the nation's capital, Ottawa, and a thirty-minute drive from the international bridge linking Ontario and upstate New York. The city is also the origin of the historic Rideau Canal system – a UNESCO International Heritage site. For more information please see: <https://www.cityofkingston.ca/explore/about-kingston>

Our second location is in downtown Toronto, where much of the Management Analytics group's activities take place. As demonstrated by various international rankings and reports, Toronto is one of the best cities in the world to live and work. For more information please see: <https://www.toronto.ca/city-government/data-research-maps/toronto-progress-portal/world-rankings-for-toronto/>



How to Apply

The effective date of the appointment will be July 01, 2020, but is flexible.

The University invites applications from all qualified individuals. Queen's is committed to employment equity and diversity in the workplace and welcomes applications from women, visible minorities, Aboriginal peoples, persons with disabilities, and LGBTQ persons. All qualified candidates are encouraged to apply; however, in accordance with Canadian immigration requirements, Canadian citizens and permanent residents of Canada will be given priority.

The University will provide support in its recruitment processes to applicants with disabilities, including accommodation that takes into account an applicant's accessibility needs. If you require accommodation during the interview process, please contact: Roshan Udit at rgul1@queensu.ca. Academic staff at Queen's University are governed by a Collective Agreement between the University and the [Queen's University Faculty Association \(QUFA\)](http://queensu.ca/facultyrelations/faculty-librarians-and-archivists/collective-agreement), which is posted at <http://queensu.ca/facultyrelations/faculty-librarians-and-archivists/collective-agreement> and at <http://www.qufa.ca>.

To comply with Federal laws, the University is obliged to gather statistical information about how many applicants for each job vacancy are Canadian citizens / permanent residents of Canada. Applicants need not identify their country of origin or citizenship; however, all applications must include one of the following statements: "I am a Canadian citizen / permanent resident of Canada"; OR, "I am not a Canadian citizen / permanent resident of Canada". Applications that do not include this information will be deemed incomplete. Your application cover letter must include one of these two citizenship statements.

Applicants should submit:

- A cover letter, including one of the two statements regarding Canadian citizenship/permanent resident status specified in the previous paragraph
- A current Curriculum Vitae, including a list of publications
- A statement of current and prospective research interests
- Evidence of research, such as copies of sample publications, working papers, or a dissertation proposal
- A statement of teaching interests and experience, including course outlines and evaluations, if available
- Three letters of reference

Deadline for applications: September 4, 2019

Note: only selected candidates will be contacted for interviews.

Submitting your application

Please submit your application package via Interfolio Faculty Search through the following link:
<http://apply.interfolio.com/64506>



CORS AWARD WINNERS

Congratulations to the winners of the awards and prizes presented at CORS 2019. Special thanks to all the participants and judges. Details on CORS awards and prizes, including a list of past winners, can be found on the CORS website www.cors.ca

Harold Larnder Prize
Omond Solandt Award
CORS Award of Merit
Eldon Gunn Service Award

Ralph Tyrrell Rockafellar
Federated Co-operatives Limited
Mikael Rönnqvist
Dionne Aleman

CORS Practice Prize: Winner

Francis Marleau-Donais, Irène Abi-Zeid, Roxane Lavoie (Université Laval)

Edward Owen Douglas Waygood (Polytechnique Montréal)

"Prioritizing the redesign of streets according to Complete Street principles: A multi-criteria approach"

CORS Practice Prize: Honourable Mention

Antoine Legrain (Polytechnique Montréal), **Jonathan Patrick** (University of Ottawa)

"Inventory Management Using an (s,S)-Policy at The Bank of Canada"

CORS Student Paper Competition Open Category: Winner

Christian Bingane, Miguel Anjos, Sébastien Le Digabel (Polytechnique Montreal)

"Tight-and-cheap conic relaxation for the AC optimal power flow problem"

CORS Student Paper Competition Open Category: Honourable Mention

Gabriel Jarry-Bolduc, Warren Hare (University of British Columbia)

"Calculus Identities for Generalized Simplex Gradients: Rules and Applications"

CORS Student Paper Competition Undergraduate Category

Milan Preet Kaur, Mandeep Hanspal, Jui Dhaval Champaneri, Sathana Srikanthan
(University of Waterloo)

"Optimal Re-allocation of Pay and Display Machines for Toronto Parking Authority"

Health Care OR SIG Student Presentation Prize: Winner

Danielle A. Ripsman (University of Waterloo)

"Warm-Started Robust Direct Aperture Optimization for Cancer Treatment Planning"

Health Care OR SIG Student Presentation Prize: Honourable Mention

Rafid Mahmood (University of Toronto)

"Automated Treatment Planning in Radiation Therapy using Generative Adversarial Networks"

Queueing Theory SIG Student Paper Prize

Eugene Furman (York University)

"Customer Acquisition and Retention: A Fluid Approach for Staffing"

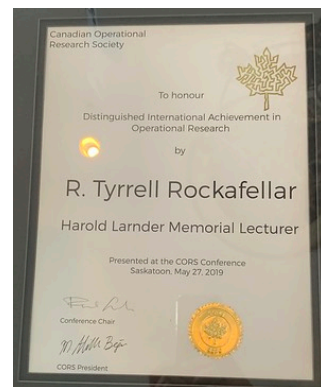
HAROLD LARNDER PRIZE

Ralph Tyrrell Rockafellar

The Harold Larnder Prize is awarded annually to an individual who has achieved international distinction in operational research. The prize winner delivers the Harold Larnder Memorial Lecture, on a topic of general interest to operational researchers, at the National Conference of the Canadian Operational Research Society. Harold Larnder was a well-known Canadian in wartime OR. He played a major part in the development of an effective radar-based air defense system during the Battle of Britain. He returned to Canada in 1951 to join the Canadian Defence Research Board and was President of CORS in 1966–67.



CORS President Mehmet Begen (L) and Ralph Tyrrell Rockafellar (R)





OMOND SOLANDT AWARD

Federated Co-operatives Limited

The Omond Solandt Award is awarded to an organization, private or governmental, that is deemed to have made an outstanding contribution to operational research in Canada. Dr. Solandt was the founder and first chairman of the Defence Research Board (DRB). At various times in his life he headed the Science Council of Canada was a vice-chairman of Canadian National Railways (CNR), and Chancellor of the University of Toronto.

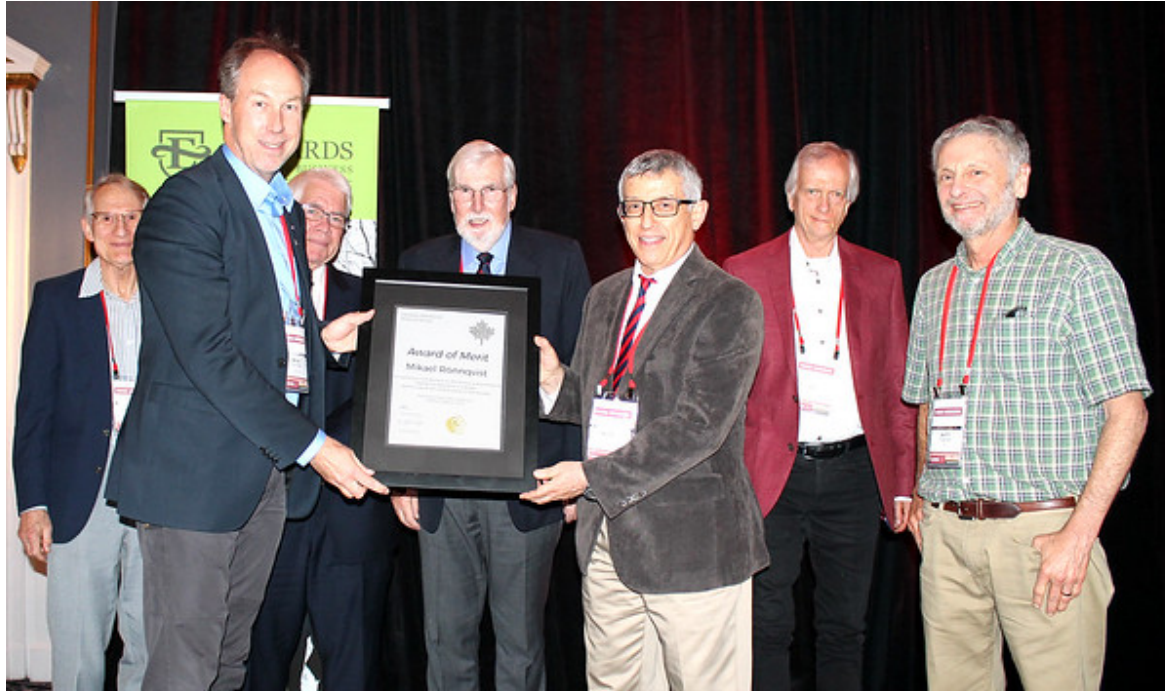




CORS AWARD OF MERIT

Mikael Rönnqvist

The Award of Merit is awarded to a present or past member of CORS in recognition of significant contributions to the profession of operational research.



Past recipient Mahmut Parlar (R) presents to Mikael Rönnqvist (L)

ELDON GUNN SERVICE AWARD

Dionne Aleman

The Eldon Gunn Service Award is presented to Members of the Society who have made outstanding contributions of time and service to the Society, at the national or local level, as conference organisers or as editors of CORS publications. Eldon Gunn was a major contributor to the Society since the early 1980s and to operational research in Canada since the 1970s. He was one of the first recipients of the service award in 1987 after serving in Council and acting as conference chair for the 27th CORS Annual Conference in Halifax in 1985. He went on to serve as president of the Society in 1991 and continued his service with passion up until his passing in 2016.



*CORS President Mehmet Begen (R) and Michael Carter (L)
present to Dionne Aleman (in absentia)*



CORS PRACTICE PRIZE

Each year the Canadian Operational Research Society conducts a competition on the practice of operational research to recognize the challenging application of the OR approach to the solution of applied problems. The main criteria considered in evaluating submissions are project impact on the client organization, contribution to the practice of OR, quality of analysis, degree of challenge and quality of written and oral presentation.

Winner

Francis Marleau-Donais, Irène Abi-Zeid, Roxane Lavoie (Université Laval)

Edward Owen Douglas Waygood (Polytechnique Montréal)

“Prioritizing the redesign of streets according to Complete Street principles: A multi-criteria approach”

Honourable Mention

Antoine Legrain (Polytechnique Montréal), **Jonathan Patrick** (University of Ottawa)

“Inventory Management Using an (s,S)-Policy at The Bank of Canada”

Finalists

Aysajan Eziz (Western University), **Ken Jordan** (Alderbrook Resort & Spa)

Timothy Baker, Robert Harrington (Washington State University)

“Data-Driven Adaptive Pricing Algorithm for Hotel Revenue Management”

Yves Lucet, Warren Hare, Dominique Monnet (University of British Columbia, Okanagan)

“Speeding up road design optimization using variable fidelity algorithms and a quantile regression surrogate”



Practice Prize Chair Mikael Rönnqvist presents to Francis Marleau-Donais (L) & Antoine Legrain (R)



CORS STUDENT PAPER COMPETITION

Each year the Canadian Operational Research Society conducts a student paper competition to recognize the contribution of a paper either directly to the field of operational research through the development of methodology or to another field through the application of operational research. The competition serves to showcase the high quality of OR education in Canada as well as the excellence of the new generation of operational researchers. Prizes are awarded in two categories: Undergraduate and Open. MBA students (and other specialized master students) are encouraged to participate in the competition in the open category with their applied projects.

Open Category Winners

Christian Bingane, Miguel Anjos, Sébastien Le Digabel (Polytechnique Montreal)
"Tight-and-cheap conic relaxation for the AC optimal power flow problem"

Open Category Honourable Mention

Gabriel Jarry-Bolduc, Warren Hare (University of British Columbia)
"Calculus Identities for Generalized Simplex Gradients: Rules and Applications"

Open Category Finalists

Milad Dehghani Filabadi, Sahar Pirooz Azad, Houra Mahmoudzadeh (U of Waterloo)
"A Robust Optimization Approach for Partially-Ineffective Uncertainty Sets with Application to Power Dispatch"



Open Category Chair Nadia Lahrichi presents to Christian Bingane (L) & Gabriel Jarry-Bolduc (R)



CORS STUDENT PAPER COMPETITION

Undergraduate Category Winners

Milan Preet Kaur, Mandeep Hanspal, Jui Dhaval Champaneri, Sathana Srikanthan (University of Waterloo)
“Optimal Re-allocation of Pay and Display Machines for Toronto Parking Authority”

Undergraduate Category Finalists

Kexin Zhang, Yuhong Yang, Xiyang Li, Francisco Vargas (University of Toronto)
“Predicting Inpatient Bed Demand at a Large Community Hospital”

Liam Erdos, Ben Gregson, Shane Jace, Hanchao Zhu (Simon Fraser University)
“Reducing Acute Care Usage by Optimizing the Operating Hours of Two Vancouver Primary Care Clinics”

Laura Arrizza, Caroline Davey, Melanie Roy, Gordon Lau (University of Waterloo)
“Wheels for Wellness Scheduling System”

Jia Qi Xi, Jiayue Niu, Huiqing Lu, Pratana Charoenkitkarn (University of Toronto)
“Optimization of Hospital Portering Process”



*CORS Education Chair Anjali Awasthi (R) presents to
Jui Dhaval Champaneri (L) and Milan Preet Kaur (C)*



HEALTH CARE OPERATIONAL RESEARCH SIG Student Presentation Prize

Danielle A. Ripsman

Rafid Mahmood

Winner

Danielle A. Ripsman (University of Waterloo)

“Warm-Started Robust Direct Aperture Optimization for Cancer Treatment Planning”

Honourable Mention

Rafid Mahmood (University of Toronto)

“Automated Treatment Planning in Radiation Therapy using Generative Adversarial Networks”



SIG President Valérie Bélanger presents to Danielle A. Ripsman (L) & Rafid Mahmood (C)



QUEUEING THEORY SIG Student Paper Prize

Eugene Furman

First Prize was awarded to **Eugene Furman** (York University) supervised by Adam Diamant, with the winning paper titled "Customer Acquisition and Retention: A Fluid Approach for Staffing" submitted to Management Science in 2018. This paper is chosen for the prize for effectively combining ODE and integer programming to determine optimal staffing levels for multi class queueing networks in a timevarying environment.

The selection committee members are Drs. Gennady Shaikhet (Chair), Opher Baron, and Daniel Ding.



SIG President Qi-Ming He (R) presents to Eugene Furman (L)

**2019–2020 CORS BUDGET**

	2017-2018		2018-2019		2019-2020
	Budget	Actual	Budget	Actual	Budget
I. Revenues					
Membership Dues	30,000	32,404.98	20,000	24,461.90	30,000
Conference Profit	35,000	118,853.30	-	1,054.16	-
Conference Advance returns	47,300	47,300.00	20,000		40,000
Tax	1,500	1,620.25	1,500	1,294.85	
Miscellaneous		1,618.63		266.67	
Total Revenues	113,860	201,797.12	41,500	27,077.58	70,000

II. Expenses					
Administrative Expenses:					
Administrative Support	12,000	9,000.00	12,000	15,191.52	12,000
Supplies, Other Expenses	2,000	1,064.70	2,000	3,986.35	2,000
Bookkeeping support					4,800
Bookkeeping expense					200
Translation services	2,500	1,934.50	2,500	1,332.96	2,500
Council Meeting	4,000	3,664.40	4,000	5,124.46	4,000
Sections Shares	10,000	12,036.00	10,000	11,403.51	15,000
Sections Shares of Conf Profit	1,500	2,153.10	1,500	5,749.58	2,000
IFORS Subscription	500	527.56	500	507.55	600
Conf Expenses (Larnder, etc.)	3,000	5,377.00	3,000		4,000
2019 Saskatoon		20,000.00		20,000.00	
Awards/Prizes	3,600	2,800.00	3,600	1,191.24	3,600
Travelling Speaker Program	2,000	652.81	2,000		2,000
GST/HST	2,000		15,000	199.61	15,000
Bank, Credit Card Charges	1,000	1,437.10	1,000	507.41	1,500
Web Services	5,025	1,010.60	5,025		
CORS Conf attendance Funding	12,000	10,869.00	8,000	6,051.82	8,000
Total Expenses	62,625	72,527.80	71,625	71,246.01	77,200

Total Revenues	113,860	201,797	41,500	27,078	70,000
Total Expenses	62,625	72,528	71,625	71,246	77,200
Total	51,235	129,269	(30,125)	(44,168)	(7,200)

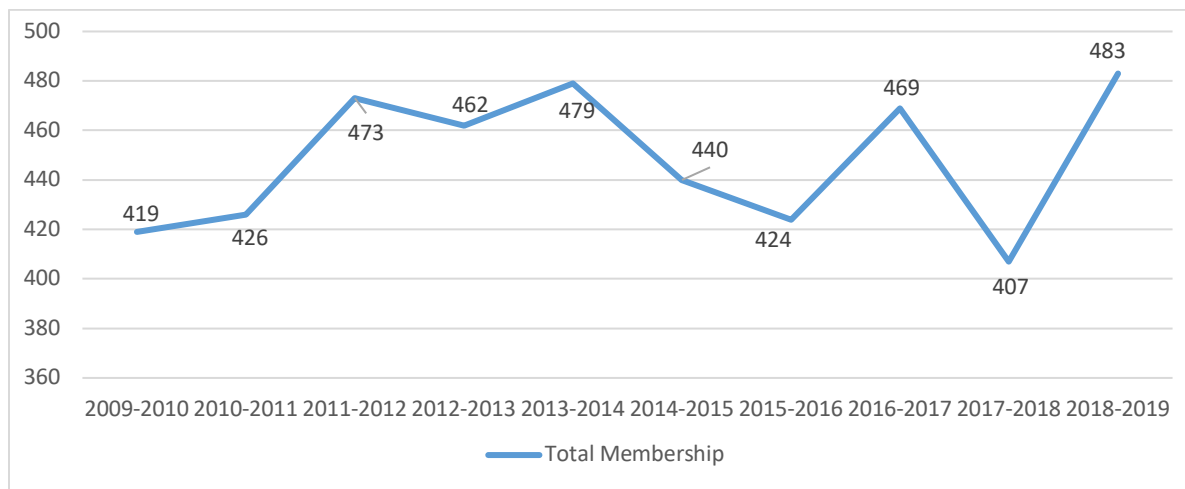


2018–2019 CORS MEMBERSHIP REPORT

I am pleased to submit a copy of the 2018–2019 Annual Membership Report of the Canadian Operational Research Society, which documents the membership activities experienced by the Society over the past year, for the consideration of CORS Council. The report provides Council with the information it needs to assess the health and well-being of the Society; to monitor the effectiveness of membership processes and practices; and to identify areas where policy initiatives or changes may be required. This report reveals that CORS experienced **an increase in membership in 2018–2019 of 19%**. These graphs summarize the report, which can be seen in full on the CORS website www.cors.ca

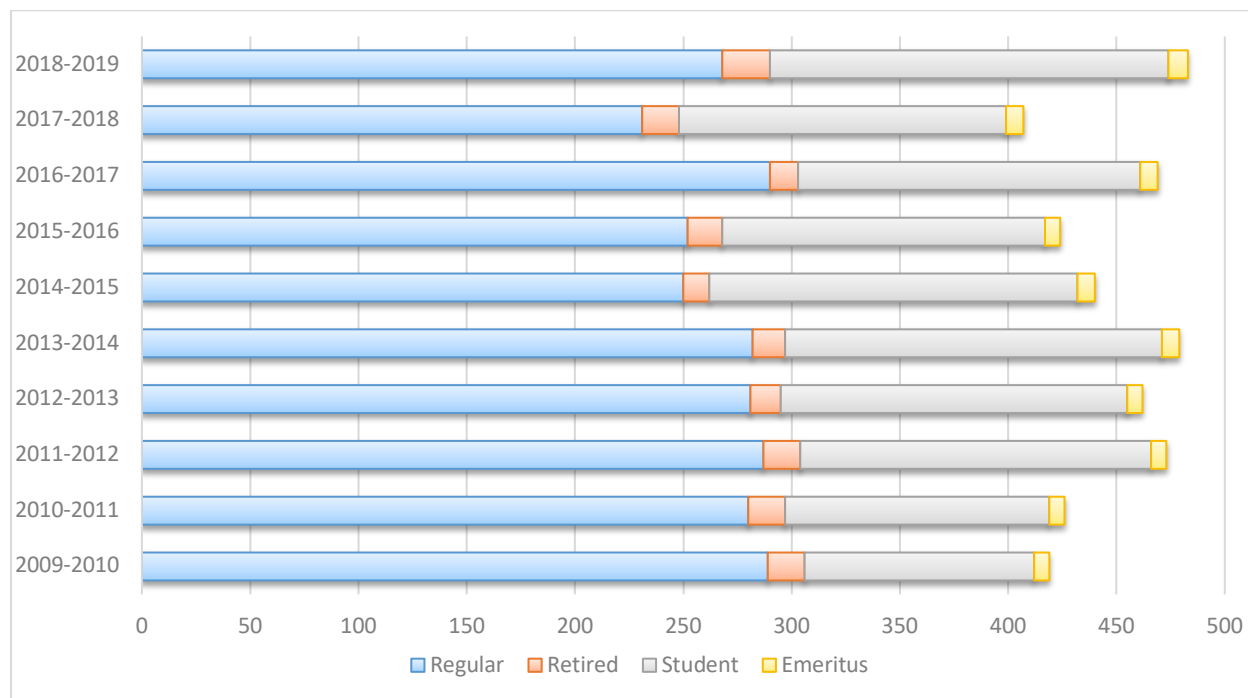
Erla Anderson, Membership Services Provider (members@cors.ca)

CORS Membership 2009–2019

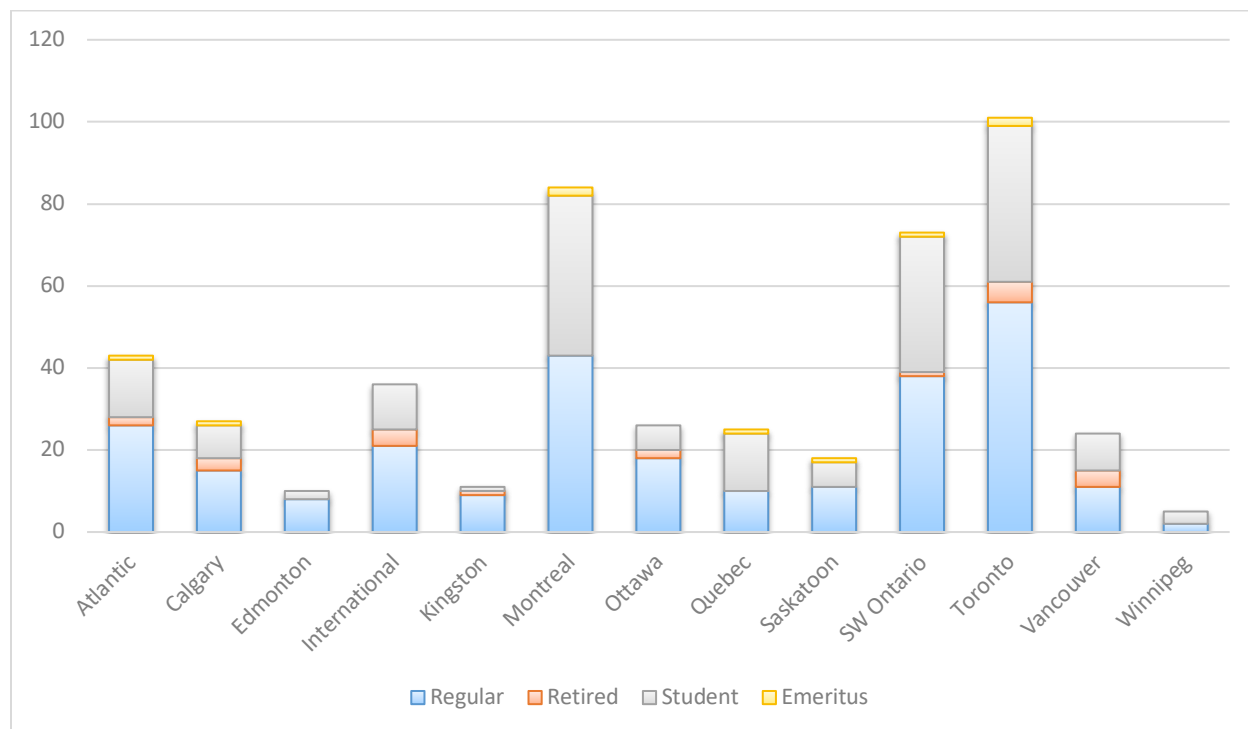




CORS Membership by Member Type 2009–2019



CORS Membership by Section and Member Type March 31, 2019



CORS ANNUAL CONFERENCE
June 8–10, 2020, Toronto, Ont.



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.

SIGs formed so far include:

CORS FORESTRY SIG

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

CORS HEALTH CARE OPERATIONAL RESEARCH SIG

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

CORS QUEUEING THEORY SIG

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

CORS ANALYTICS SIG

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

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 (mpavlin@wlu.ca)
Andrea Friars, (andreafrs@gmail.com)
Erdem Coskun, (mehmeterdemcoskun@gmail.com)



SPECIAL INTEREST GROUP NEWS

CORS Health Care Operational Research SIG Updates – August 2019

The CORS Health Care Operations Research (HCOR) SIG hosted several events at the 2019 CORS Annual Conference in Saskatoon. The **Healthcare Track** of the CORS 2019 Annual Conference included seven sessions and 29 presentations. The **CORS HCOR SIG Business meeting** was held on Monday May 27. In addition, the following two events were organized by the HCOR SIG:

Canadian Healthcare Optimization Workshop (CHOW)

The CORS HCOR SIG proudly hosted the 3rd annual Canadian Healthcare Optimization Workshop right before the annual CORS conference. This workshop promotes the research of young scholars and provides a forum for researchers with a common interest in healthcare optimization to share the latest advances with other researchers and practitioners in the field. The workshop also connects researchers with practitioners to discuss innovative solutions and best practices that help improve the effectiveness of the healthcare system. This year's workshop included:

- Plenary by Prof. Mike Carter
- Four technical sessions including seven research presentations by young scholars
- Roundtable discussion
- Evening reception

Health Care Operations Research SIG Student Presentation Prize

The CORS HCOR SIG oral presentation competition for graduate students emphasizes the importance of presentation skills and provides an opportunity for students to receive formal feedback, learn best practices from their peers, and be recognized for excellence in this area. The goal is to have students demonstrate mastery of coherent and engaging presentations describing a completed research project on a significant healthcare topic within a five-minute time limit. In this year's competition, four finalists presented a five-minute presentation each at the conference. The competition results were announced at the awards ceremony:

Winner: **Danielle Ripsman, University of Waterloo** – Warm-Started Robust Direct Aperture Optimization for Cancer Treatment Planning

Runner-up: **Rafid Mahmood, University of Toronto** – Automated Treatment Planning in Radiation Therapy using Generative Adversarial Networks

Finalist: **Negar Ganjoughaghi, University of Calgary** – Physician Staffing and Shift Scheduling at Emergency Departments with Time Varying Productivity

Finalist: **Mostafa Rezaei, University of Alberta** – The tradeoff between forecast accuracy and spatiotemporal resolution for EMS call volumes



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 7, 2020	CORS Council Meeting, Toronto, Ont.
Jun 8, 2020	CORS Council Meeting, Toronto, Ont.
Jun 9, 2020	CORS Annual General Meeting, Toronto, Ont.

CORS ANNUAL CONFERENCES

Jun 8–10, 2020	CORS Annual Conference, Toronto, Ont.
2021	CORS Annual Conference, Montreal, Que.
2022	CORS Annual Conference joint with INFORMS International, TBA

WWW CONFERENCE LISTINGS

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

INFORMS: www.informs.org/attend-a-conference

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: www.poms.org/conferences

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



THE NEXT ISSUE

The next issue of the Bulletin is scheduled to appear in **November**. Along with the regular features and news from the local sections, it will include more information about the next CORS conference. Contributions to this issue, especially news on the activities of local sections or CORS members, should be submitted by **October 25, 2019** to:

Andrea Friars
Editor, CORS Bulletin
11 Sawgrass Drive
Oakfield, NS B2T 0G1
Phone: 902-895-8430 ext. 3236
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 ListServ. Direct inquiries to the Editor.

CORS LISTSERV

As a benefit of membership, members may use the CORS ListServ 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 ListServ is not used for commercial purposes, and all messages are vetted before they are sent out. To submit items to the ListServ, 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