

The CORS Bulletin

VOLUME 51, NUMBER 3 – AUGUST 2017 ISSN 0315-1417

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IN THIS ISSUE

Dear CORS Members,

First, there is a detailed update on all the changes to council for the upcoming year, and a message from our returning president, Dionne Aleman.

Second, you'll find a comprehensive overview of all the great things that took place at the CORS/IFORS July conference. There are summaries of all the prize winners and their papers, and biographies for each of the deserving award winners, as well as plenty of photographs to capture the presentations. Congratulations to everyone who participated!

You will also find the budget for next year and our latest membership information, along with a first look at next year's conference in Halifax, NS.

Finally, our local chapters and special interest groups have some news, so check out those write ups for the details.

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

Editor

Editor Andrea Friars

Publisher CORS/SCRO Box/C.P. 2225, Station D

<u>Distributor</u> Erla Anderson

Elected Officers

President Dionne Aleman
Vice-President Mehmet Begen
Past-President Fredrik Ødegaard
Secretary Peter VanBerkel
Treasurer Sonia Vanderby
Councillors Stan Dimitrov (16–18)

Anjali Awasthi (16–18) Bora Kolfal (17–19) Jules Comeau (17–19)

Ottawa, ON K1P 5W4

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Awards

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Public Relations Dionne Aleman,
Publications Samir Elhedhli, Elka
Hassini, Andrea Fria

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Board

Program

Section Relations

Ad hoc Committees

Practice Prize Student Paper Competition

Award of Merit

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Financial Planning

Analytics

Industry

Nominating Travelling Speakers

Program

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Samir Elhedhli, Elkafi Hassini

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Erla Anderson
Erla Anderson

Fredrik Ødegaard

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www.linkedin.com/company/canadian-operational-

research-society



THE 2017–2018 COUNCIL

CORS Council is made up 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. For a complete listing go to www.cors.ca

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Councillor Stan Dimitrov, University of Waterloo, sdimitro@uwaterloo.ca

Councillor Anjali Awasthi, Concordia University, anjali.awasthi@concordia.ca

Councillor Bora Kolfal, University of Alberta, bkolfal@ualberta.ca

Councillor Jules Comeau, Université de Moncton, jules.comeau@umoncton.ca

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Calgary Neil Barnes, Canadian Natural Resources Limited, neil.barnes@cnrl.com
Edmonton Armann Ingolfsson, University of Alberta, armann.ingolfsson@ ualberta.ca
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Toronto Student Kyle Booth, University of Toronto, kyle.booth@mail.utoronto.ca

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Waterloo Student

Abdelhalim Hiassat, University of Waterloo, ahhiassat@uwaterloo.ca

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Montréal Student Carlos Armando Zetina, Concordia University, c zetina@encs.concordia.ca



RECENT CHANGES TO COUNCIL AND COMMITTEES

Post	Previous	New	
Council			
President	Dionne Aleman Louis-Martin Rousseau Fredrik Ødegaard Peter VanBerkel Sonia Vanderby Tatsiana Levina, Michael Pavlin, Stan Dimitrov, Anjali Awasthi	Dionne Aleman Mehmet Begen Fredrik Ødegaard Peter VanBerkel Sonia Vanderby Stan Dimitrov, Anjali Awasthi Bora Kolfal, Jules Comeau	
Standing Committees			
Awards Education	Louis-Martin Rousseau, Stan Dimitrov, Michael Pavlin Mehmet Begen Michael Pavlin Louis-Martin Rousseau, Marko Bijvank, Bernard Gendron Dionne Aleman Samir Elhedhli, Elkafi Hassini, Andrea Friars Dionne Aleman, Fredrik Ødegaard, Peter Bell, David Martell, Rick Caron Louis-Martin Rousseau Anjali Awasthi, Tatsiana Levina, Sonia Vanderby	Mehmet Begen, Jules Comeau, Stan Dimitrov Anjali Awasthi Bora Kolfal Mehmet Begen, Bernard Gendron, Corinne MacDonald Dionne Aleman Samir Elhedhli, Elkafi Hassini, Andrea Friars Dionne Aleman, Fredrik Ødegaard, Peter Bell, David Martell, Rick Caron Mehmet Begen Bora Kolfal, Anjali Awasthi, Sonia Vanderby	
Ad hoc Committees			
Practice Prize Student Paper Competition Award of Merit	Mikael Rönnqvist Nadia Lahrichi, Stan Dimitrov Fredrik Ødegaard, Jean-François Cordeau, Tamás Terlaky	Mikael Rönnqvist Nadia Lahrichi, Stan Dimitrov Fredrik Ødegaard, John Chinneck, Jean-François Cordeau	
Financial Planning	Sonia Vanderby, Fredrik Ødegaard, Dionne Aleman, Louis-Martin Rousseau	Sonia Vanderby, Fredrik Ødegaard, Dionne Aleman, Mehmet Begen	
Analytics Industry	Tatsiana Levina, Peter Bell, Marie-Claude Côté Dionne Aleman, Fredrik Ødegaard,	Jules Comeau, Peter Bell, Marie-Claude Côté Dionne Aleman, Fredrik Ødegaard,	
Nominating	Hatem Ben Amor Fredrik Ødegaard Fredrik Ødegaard Samir Elhedhli, Elkafi Hassini Andrea Friars Peter VanBerkel	Hatem Ben Amor Fredrik Ødegaard Fredrik Ødegaard Samir Elhedhli, Elkafi Hassini Andrea Friars Peter VanBerkel	



PRESIDENT'S MESSAGE

Hello CORS members!

Summer is waning, even though the weather in Toronto seems like summer only just arrived last week. It is hard to believe that fall (and the semester) is just around the corner.

The CORS/IFORS conference has come and gone, and I am still catching my breath and catching up with my emails after spending a week in Québec City with 1500+ of my closest OR friends giving over 1300 talks, including plenaries from Nobel Laureate Alvin Roth and CORS' own Harold Larnder winner Egon Balas. The conference was a magical mix of wonder, whimsy, and of course, operations research. My hat goes off to the conference co-Chair team of Iréne Abi-Zeid, Bernard Gendron, Michael Morin, and Angel Ruiz. I will now never be able to truly enjoy another conference if it doesn't have ice cream and circus performers. Yes, there really were circus performers at the conference opening ceremonies!



I don't envy the CORS 2018 Halifax team for having to follow Québec City, but the Halifax conference is guaranteed to please. **In Halifax, we will celebrate CORS' 60th anniversary!** There will be plenty of surprises and special offerings at the conference, so be sure to mark off June 4–6, 2018 in your calendar. The conference website is already up: https://eventspe.com/cors2018/. Abstracts will be due November 15.

Continuing the upcoming 60th anniversary celebrations, Council is moving forward with the **new logo competition** plans. The webpage with the details will be up in the very near future, and may be up by the time you read this Bulletin. Keep your eyes open for messages from the listserv and tweets from me. **If you have any great ideas for ways that we can celebrate** our anniversary or just do something fun at the conference or throughout the year, tweet/email me!

Good luck in your fall courses!

Dionne Aleman

Twitter: @CORS_President



2017–2018 CORS Presidency

Greetings CORS Members,

For those of you who were unable to attend the CORS Annual General Meeting (AGM) held at the CORS/IFORS 2017 conference, this message serves to summarize and report on the special circumstance regarding the 2017–2018 CORS Presidency.

Under normal circumstances the current Vice-President becomes next year's President (who in turn becomes the CORS Council officer of Immediate Past Present). Unfortunately, however, during 2016–2017 Vice-President Louis-Martin Rousseau could for unforeseeable but most understandable reasons not fulfill the duty to serve as President.

While the CORS Bylaws have some general stipulations that an election should be held at the AGM there is no explicit protocol of the election; see Bylaw No. 7 (i). The general election protocol and eligibility requirements are stated in Bylaw No. 5. The Bylaws are available online at www.cors.ca

As the Immediate Past President and Chair of the Nominating Committee I sought feedback from about 10 past CORS Presidents to see what specific protocol to follow. The general sentiment was that the protocol should follow the general election process and eligibility requirements as close as possible (specifically Bylaw No. 5 (e)). To do so there was a call for nominations in the 2017 No. 1 February issue of the CORS Bulletin, with a follow-up CORS ListServ announcement on March 28, 2017. The Nominating Committee received one nomination as posted in the 2017 No. 2 May issue of the CORS Bulletin; the nominee was 2016–2017 CORS President Dionne Aleman. Following the election protocol of Bylaw No. 5 (f) Dionne Aleman was declared elected by acclamation.

With the President position filled by the current President this leaves the position Immediate Past President vacant. As there are no Bylaws specifying the protocol an open discussion how to fill the vacant Immediate Past President was held at the CORS Past President Breakfast (Tuesday July 18, 2018; 18 Past Presidents were present). The consensus was for me to continue as the Immediate Past President.

If you have any questions or would like more details feel free to email me. During 2017–2018 CORS Council will work on a proposed Bylaw amendment to provide a more explicit protocol (in accordance with Bylaw No. 13). If you have any suggestions or concerns regarding any such amendment again feel free to email me.

Sincerely,

Fredrik Odegaard CORS Immediate Past President, 2016–2017 & 2017–2018 fodegaard@ivey.uwo.ca



CORS AWARD WINNERS

Congratulations to the winners of the awards and prizes presented at CORS 2017. 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 http://www.cors.ca

Harold Larnder Prize Egon Balas
Omond Solandt Award FPInnovations
CORS Award of Merit John Chinneck

CORS Service Award Louis-Martin Rousseau and Irène Abi-Zeid

CORS Practice Prize

First Prize

Philippe Grangier, Marc Brisson, Michel Gendreau, Fabien Lehuédé, Louis-Martin Rousseau, John Ye (École Polytechnique de Montréal)

"A Two-Phase Algorithm for a 3D Container Loading Problem"

Second Prize

Felipe Rodrigues, Greg Zaric, David Stanford (Western University)

"Discrete-Event Simulation Model for Planning Level 2 'Step-Down' Beds Using NEMS"

CORS Student Paper Competition Open Category

First Prize

Seyed Hossein Hashemi Doulabi (École Polytechnique de Montréal)

"Vehicle Routing Problems with Synchronized Visits and Stochastic/Time-Dependent Travel and Service Times: Applications in Healthcare"

Second Prize

Gizem Nemutlu (University of Waterloo)

"Optimal Vaccine Administration Policies Using Multi-dose Vials of Different Sizes"

CORS Student Paper Competition Undergraduate Category

Alexandra Hayes, Christian Gould, Kevin Chu, Srikajan Santhirakumaran (University of Waterloo)

"End-to-End Analytics: Wait Time Management of Ontario MRI Services"

CORS Forestry SIG David Martell Student Paper Prize in Forestry

Gregory Paradis (UBC)

"A bilevel model formulation for the distributed wood supply planning problem"

CORS Health Care Operations Research SIG Student Presentation Prize

Hootan Kamran (University of Toronto)

"Automated quality assurance for radiotherapy treatment plans"

CORS Queueing Theory SIG Student Paper Prize

Vincent Maccio (McMaster University)

"Exact analysis of energy-aware multiserver queueing systems with setup times"



HAROLD LARNDER PRIZE

Egon Balas

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.



Conference Chair Bernard Gendron (R) presents the Harold Larnder Prize to Egon Balas (L)



Egon Balas is a professor of Industrial Administration and Applied Mathematics as well as the Thomas Lord Professor of Operations Research at Carnegie Mellon University. He has a doctorate in Economic Science from the University of Brussels and a doctorate in Mathematics from the University of Paris. Professor Balas' research interests are in mathematical programming, primarily integer and combinatorial optimization. He has played a leading role in the development of enumerative and cutting plane techniques for 0-1 programming. In 1980, Professor Balas received the US Senior Scientist Award of the Alexander von Humboldt Foundation. In 1995, he was awarded the John von Neumann Theory Prize of INFORMS, and in 2001, he received the EURO Gold Medal of the European Association of Operational Research Societies. In 2002 Balas became a Fellow of INFORMS, in 2004 he was elected an external member of the Hungarian Academy of Sciences, and in 2006 he became a member of the National Academy of Engineering. That same year, he was inducted into the IFORS Hall of Fame. Professor Balas has honorary doctorates from Miguel Hernandez University, Spain (2002), from the University of Waterloo, Canada (2005) and from the University of Liège, Belgium (2008). He has published over 200 articles and studies in the professional literature. He is also the author of Will to Freedom: A Perilous Journey through Fascism and Communism (2000), a memoir of his life before migrating to the U.S.A.

COUNCIL CORNER

This section of the CORS Bulletin will highlight recent discussions by the CORS Council and motions of particular interest that have been passed.

 We welcomed Anjali Awasthi as the new Education Chair and new councillors Bora Kolfal and Jules Comeau.

CORS FUNDING OPPORTUNITIES

Traveling Speakers Program

The Traveling Speakers Program (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 (http://www.cors.ca/?q=content/traveling-speakers-program).

Fredrik Ødegaard, TSP Coordinator (fodegaard@ivey.uwo.ca)



OMOND SOLANDT AWARD

FPInnovations

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.

FPInnovations is a not-for-profit organization that specializes in the creation of innovative scientific solutions in support of the Canadian forest sector's global competitiveness and responds to the priority needs of its industry members and government partners. FPInnovations' staff numbers more than 525. Its R&D laboratories are located in Montreal, Quebec City, and Vancouver, and it has technology transfer offices across Canada. Through its Value Maximization and Decision Support (VMDS) research program, FPInnovations aims to help member companies optimize their value chain and improve decision making by providing a variety of tools, resources and best practices. VMDS has been working to develop new models with the support of the NSERC Value Chain Optimization (VCO) network (2009–2015). FPInnovations has played a prominent role in supporting the activities of the VCO network, which brought together 17 universities, 60 professors and researchers, and more than 55 graduate students, and led to the realization of more than 93 research projects.



Conference Chair Bernard Gendron (R) presents the Omond Solandt Award



CORS AWARD OF MERIT John Chinneck

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.

John Chinneck is a Professor at the Department of Systems and Computer Engineering, Carleton University. He has a BASc (1977), MASc (1978) and PhD (1983) in Systems Design Engineering from University of Waterloo. Since joining Carleton University in 1986 Professor Chinneck has served as Faculty Member, Department Chair, and Associate Dean. He has supervised more than 25 MSc and PhD students, and served as a member of 70+ graduate examination boards. Professor Chinneck has served and still serves as Editor-in-Chief, Advisory Board member, Area Editor and Guest Editor to many of the top OR journals, including INFORMS Journal on Computing, Constraints, Computational Management Science, and Computers and Operations Research. He also served/serves on various committees of INFORMS, the Mathematical Programming Society, and – of course – as a long-standing and highly valued member of CORS. He has also worked as a consultant with IBM, CPLEX and other organizations.

Professor Chinneck's research expertise spans a range of important and challenging Operations Research topics, including: optimum allocation of tasks to resources in cloud computing; nonlinear programming and mixed-integer programming; algorithms and computer tools to assist in the formulation and "debugging" of large and complex mathematical programs; data classification via mathematical programming; applied optimization in areas such as DSP task-to-processor assignment, flexible manufacturing systems, forestry, and transistor sizing; and theory and applications of industrial processing networks. In his productive and highly prolific career he has published 40+ articles, two textbooks and co-edited a volume, 14 conference proceedings, three book chapters, 19 technical reports, and numerous conference presentations. In addition to his technical OR publications he has also published the very readable online text Practical Optimization: a Gentle Introduction, a linked web site hosting algorithm animations that illustrate key optimization concepts, and a web document for graduate students entitled How to Organize Your Thesis.





In addition to the above listed academic contributions, Professor Chinneck's research and work has also been implemented in many commercial optimization software. For instance, he is the developer of the well-known constraint consensus algorithm for finding approximately feasible solutions in nonlinear programs, which together with his LP infeasibility analysis algorithms are implemented in the AIMMS modeling system. The LP infeasibility analysis algorithms are also adopted in, among others, the Frontline Systems solvers and XPRESS-MP solvers. He is also the developer of the MProbe software for analyzing mathematical programs, especially nonlinear model functions of high dimension.

In recognition to his many contributions he received the Scholarly Achievement Award (1988) and Research Achievement Award (1995) from Carleton University, the IBM Faculty Award in 2006, and the 2017 Harvey J. Greenberg Service Award from the INFORMS Computing Society.



CORS SERVICE AWARD

Louis-Martin Rousseau and Irène Abi-Zeid

The CORS Service Award recognizes members of the Society who have made outstanding contributions of time and service to the Society.



CORS President Dionne Aleman (C) and Conference Chair Bernard Gendron (R) present the CORS Service Award to Louis-Martin Rousseau (L)

Louis-Martin Rousseau has been involved in CORS organization for multiple years. Prof. Rousseau has been both a Councillor and Vice President in CORS Council, and is tied for the longest-serving section head (seven years) during his time as the head of the Montreal Section. Prof. Rousseau additionally chaired the 2015 joint CORS/INFORMS Conference in Montreal, which was among the largest conferences ever for CORS, and required significant to coordinate the needs of both CORS and INFORMS.





CORS President Dionne Aleman (C) and Conference Chair Bernard Gendron (R) present the CORS Service Award to Irène Abi-Zeid (L)

Iréne Abi-Zeid has been involved in CORS organization for several years in multiple capacities. Prof. Abi-Zeid served for two years on CORS Council as a Councillor, and she is the head of the Quebec Section, where she is tied for the longest-serving section head (seven years). Prof. Abi-Zeid has chaired two CORS conferences in Québec City: the 2008 annual conference and this year's 2017 CORS/IFORS conference (where she was a co-Chair). Notably, the IFORS conference, with over 1500 attendees, is the largest conference ever for CORS. As IFORS co-Chair, Iréne was single-handedly responsible for both substantial cost-savings and the surprise circus performers and ice cream at the opening and closing ceremonies, respectively.



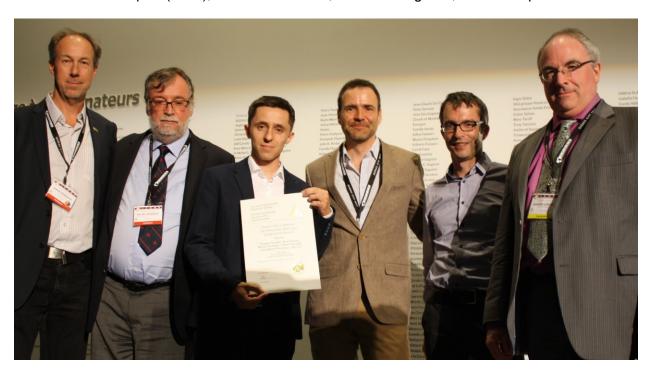
CORS PRACTICE PRIZE

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 O.R., quality of analysis, degree of challenge and quality of written and oral presentation.

The First Prize was awarded to Philippe Grangier, Marc Brisson, Michel Gendreau, Fabien Lehuédé, Louis-Martin Rousseau, and John Ye (École Polytechnique de Montréal) for the project entitled "A two phase algorithm for a real life 3D container loading problem". The assessment of the committee was "The project tackles a challenging problem, has a demonstrated impact in the client organisation, uses an innovative combination of solution methods and is used in a production system".

The Second Prize was awarded to Felipe Rodrigues, David Stanford, and Greg Zaric (Western University) for the project "Discrete event simulation model for planning level 2 "step-down" bed needs using NEMS". The assessment of the committee was "The prize committee greatly appreciated how the project study challenges a conservative organisation in a complex system".

The prizes were awarded during CORS/IFORS 2017. The members of the Prize committee were Mikael Rönngvist (chair), Bernard Gendron, Fredrik Odegaard, and Mustapha Ouhimmou.



Practice Prize Chair Mikael Rönnqvist (L) and Committee Member Bernard Gendron (R) present the CORS Practice Prize. First Prize



Practice Prize Chair Mikael Rönnqvist (L) and Committee Member Bernard Gendron (R) present the CORS Practice Prize, Second Prize, to David Stanford (CL) and Felipe Rodrigues (CR)

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 (and other specialized master students) are encouraged to participate in the competition in the open category with their applied projects.

Open Category

First Prize was awarded to Seyed Hossein Hashemi Doulabi (École Polytechnique de Montréal) for the paper "Vehicle Routing Problems with Synchronized Visits and Stochastic/Time-Dependent Travel and Service Times: Applications in Healthcare".





Open Category Chair Nadia Lahrichi (L) presents the CORS Student Paper Competition Open First Prize to Seyed Hossein Hashemi Doulabi (R)

Second Prize was awarded to Gizem Nemutlu (University of Waterloo) for the paper "Optimal Vaccine Administration Policies Using Multi-dose Vials of Different Sizes".

The judges were:

Dionne Aleman (aleman@mie.utoronto.ca), Mehmet Begen (mbegen@ivey.ca), Maciej Bukczynski (bukczyns@ualberta.ca), Ivan Contreras (icontrer@encs.concordia.ca), Stan Dimitrov (sdimitro@uwaterloo.ca), Martin Dresner (mdresner@rhsmith.umd.edu), Samir Elhedhli (elhedhli@uwaterloo.ca), Fatih Erenay (ferenay@uwaterloo.ca), Ming Hu (ming.hu@rotman.utoronto.ca), Raf Jans (raf.jans@hec.ca), Gilbert Laporte (gilbert.laporte@hec.ca), Sebastien Le Digabel (sebastien.le-digabel@polymtl.ca), Fredrik Odegaard (fodegaard@ivey.ca), Abraham Punnen (apunnen@sfu.ca), and Louis-Martin Rousseau (louis-martin.rousseau@polymtl.ca).



Undergraduate Category

First Prize was awarded to team members Alexandra Hayes, Christian Gould, Kevin Chu, and Srikajan Santhirakumaran (University of Waterloo) for the paper "End-to-End Analytics: Wait Time Management of Ontario MRI Services".

The judges were:

Hossein Abouee Mehrizi, Eman Almehdawe, Mojtaba Araghi, Sahand Ashtab, Nader Azad, Michael R. Bartolacci, Maciej Bukczynski, Bissan Ghaddar, Houra Mahmoudzadeh, Michael Pavlin, and Tamon Stephen.



Chair Stan Dimitrov (L) and Conference Chair Bernard Gendron (R) present the CORS Student Paper Competition Undergraduate Prize



CORS FORESTRY SIG David Martell Student Paper Prize in Forestry Gregory Paradis

The David Martell Student Paper Prize in Forestry recognizes outstanding scientific contributions on the theory, methodology and/or practice of operations research in forestry/forest products industry. The competition is for the best student paper submitted, published or accepted for publication in a peer-reviewed journal in the last two years. The 2017 judging team selected three finalists to present their work at CORS/IFORS: Ludwig Dimetz, Farnoush Farnia, and Gregory Paradis.

First Prize was awarded to Gregory Paradis (UBC) for the paper "A bilevel model formulation for the distributed wood supply planning problem".



Prize Judge David Martell (L) and Conference Chair Bernard Gendron (R) present the CORS Forestry SIG David Martell Student Paper Prize in Forestry to Gregory Paradis (C)



CORS HEALTH CARE OPERATIONS RESEARCH SIG Student Presentation Prize

Hootan Kamran

The 2017 judging team selected four finalists to present their work at CORS/IFORS: Christopher Sun, Lauren McNamara, Vahid Roshanaei, and Hootan Kamran.

First Prize was awarded to Hootan Kamran (University of Toronto) for the presentation "Automated quality assurance for radiotherapy treatment plans".



Prize Judge Nadia Lahrichi (L) and Conference Chair Bernard Gendron (R) present the CORS Health Care Operations Research SIG Student Presentation Prize to Hootan Kamran (C)



CORS QUEUEING THEORY SIG Student Paper Prize

Vincent Maccio

The 5th annual Student Paper Prize was awarded at the business meeting in Quebec City.

First Prize was awarded to Vincent Maccio (McMaster University) for the paper "Exact analysis of energy-aware multiserver queueing systems with setup times".



SIG President Steve Drekic (L) and Conference Chair Bernard Gendron (R) present the CORS Queueing Theory SIG Student Paper Prize to Vincent Maccio (C)



2017–2018 CORS BUDGET

		2015-2016		2016-2017		2017-2018	
		Budget	Actual	Budget	Actual	Budget	
I.	Revenues						
	Membership Dues	35,000	38,780.95	40,000	29,433.33	30,000	
	Conference Profit	12,500	26,302.18	10,000	750.00	35,000	
	Conference Advance returns					47,360	
	Tax		1,939.05		1,471.67	1,500	
	Miscellaneous				140.00		
	Total Revenues	47,500	67,022.18	50,000	31,795.00	113,860	
II.	Expenses						
	Administrative Expenses						
	Administrative Support (Contract)	12,000	12,000.00	12,000	11,622.04	12,000	
	Supplies and Other Expenses	2,000	839.47	2,000	1,608.29	2,000	
	Translation services (bulletin, website)	2,500	1,350.13	2,500	2,462.91	2,500	
	Council Meeting	4,000	502.06	4,000	936.12	4,000	
	Sections Shares of Dues & shares	3,000	6,153.00	3,000	12,296.58	10,000	
	Sections Shares of Conference Profit	1,750	-	1,500	2,300.00	1,500	
	IFORS Subscription	500	505.84	500	-	500	
	Conference Expenses (Larnder, etc.)	3,000	3,855.41	3,000		3,000	
	2016 - Banff				800.00		
	2017 - Quebec City		12,360.00		35,000.00		
	2018 - Halifax				10,000.00		
	Awards/Prizes for Competitions	3,600	1,500.00	3,600	2,800.00	3,600	
	Travelling Speaker Program	2,000	1,000.00	2,000	1,418.94	2,000	
	GST/HST	2,000	-	2,000		2,000	
	Bank and Credit Card Charges	2,000	358.63	1,000	1,481.81	1,000	
	Web Services	5,500	517.10	5,025	-	5,025	
	CORS Grad Student Funding	8,000	3,550.00	8,000	6,425.00	12,000	
	Unassigned		2,318.90				
	Total Expenses	51,850	46,810.54	62,625	89,151.69	62,625	
	Revenues - Expenses		20,211.64		57,356.69	51,235	

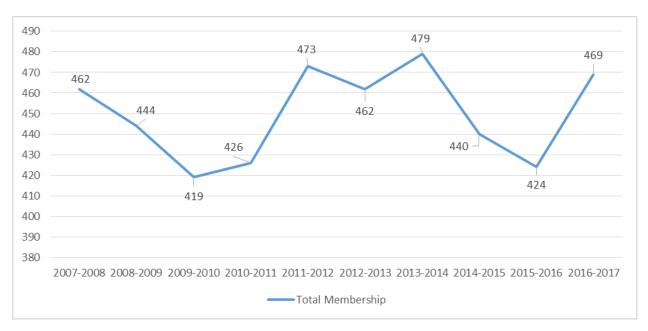


2016-2017 CORS MEMBERSHIP REPORT

I am pleased to submit a copy of the 2016–2017 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 2016–2017 of 10.6%**. These graphs summarize the report, which can be seen in full on the CORS website http://www.cors.ca

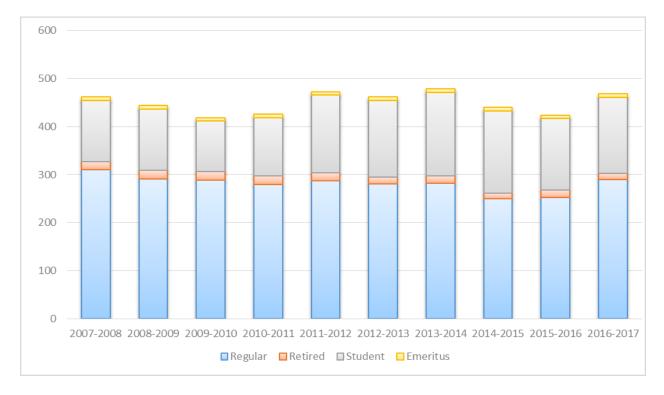
Erla Anderson, Membership Services Provider (membershipservices@cors.ca)

CORS Membership 2007–2017

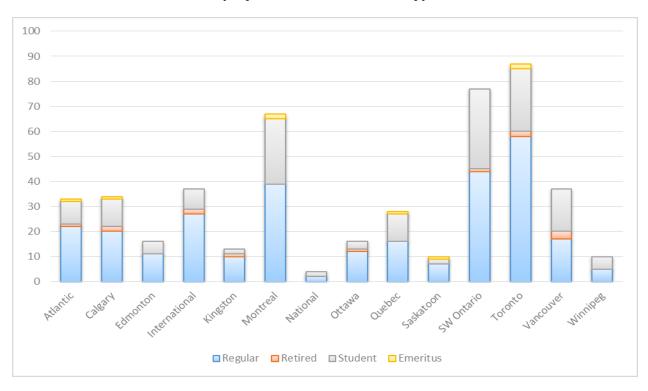




CORS Membership by Member Type 2007–2017



CORS Membership by Section and Member Type March 31, 2017









Registration and Abstract Submission open November 15th, 2017

Leaders of Operational Research in Canada Since 1958

Applications of OR in Extraction industries Applications of OR in Forestry Applied Probability and Stochastic Optimization Behavioral Operations Business Analytics E-Business Energy and Sustainable Operations Finance and Risk Management Healthcare Operations Mathematical Programming and Optimization Military Applications OR Education Queueing Theory Revenue Management and Pricing Scheduling and Project Management Supply Chain Management Transportation and Logistics

Congratulations Sara Seguin, the winner of a conference registration and 3 nights at the Hilton Homewood for CORS 2018!

Thanks to everyone who participated and visited our booth during the 2017 (EORS Conference!



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

contact Tasseda Boukherroub (tasseda.boukherroub@cirrelt.ca) École de technologie supérieure www.cors.ca/SIG/Forestry

CORS Health Care Operational Research SIG

contact Sonia Vanderby (sonia.vanderby@usask.ca)
Mechanical Engineering and Medical Imaging, University of Saskatchewan
www.cors.ca/SIG/HCOR

CORS Queueing Theory SIG

contact Qi-Ming He (q7he@uwaterloo.ca)
Department of Management Sciences, University of Waterloo
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 ioin 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 Discussions are underway about forming SIGs in several additional areas.

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

Mehmet Begen, SIG Committee Chair (mbegen@ivey.uwo.ca)



SIG NEWS

Queueing Theory

The Queueing Theory cluster (chaired by Steve Drekic), contained within the Simulation, Stochastic Programming and Modeling stream (chaired by Natashia Boland), at the IFORS/CORS Conference in Quebec City featured four queueing-themed sessions and one keynote talk delivered by David Stanford entitled "Key Performance Indicators and Their Optimal Performance". Special thanks go out to all speakers and session chairs for their valuable contributions.

The fifth annual Student Paper Prize was awarded at the business meeting in Quebec City. This year's winner is Vincent Maccio (McMaster University), for his paper "Exact analysis of energy-aware multiserver queueing systems with setup times" co-authored with Doug Down. The judging team of Yiqiang Zhao (Carleton University), Myron Hlynka (University of Windsor), and Doug Down (McMaster University) remarked on the high quality of the four submissions received this year.

Also, specific mention was made about CanQueue 2017, scheduled to take place on August 18 and 19 at the University of Windsor in Windsor, Ontario. The Conference Chair is Myron Hlynka (hlynka@uwindsor.ca) and further details concerning CanQueue 2017 can be found by visiting the conference website at http://web2.uwindsor.ca/math/hlynka/canqueue2017.html

Finally, at this business meeting, results of the election for the next Queueing SIG President were formally announced. Two nominated candidates agreed to stand for election, namely Qi-Ming He (University of Waterloo) and Javad Tavakoli (University of British Columbia, Okanagan). An election was held and votes were cast (by email) by Queueing SIG members during the period between April 24, 2017 and May 23, 2017. The votes were counted and the newly elected Queueing SIG President, set to begin his two-year term, is Qi-Ming He.

As such, if you would like to join the Queueing Theory SIG, please contact Qi-Ming He (q7he@uwaterloo.ca).



SECTION AND CHAPTER NEWS Montreal

The Montreal section strongly supported two international scientific events held in Montreal this year, namely the MIP 2017 and EUROPT 2017 workshops. The section sponsored both workshops, and members of the section were directly involved in the organization of both events.

The MIP workshops are held annually in North America and feature a limited number (~ 20 to 25) of invited talks, organized in a single track, on recent and typically unpublished work on mixed-integer optimization. The 2017 edition was held June 19–22 at HEC Montréal, and brought together more than 200 participants around a four-day program. The workshop also featured a poster competition with 35 entries, from among whom one winner and two honourable mentions were chosen. More information about MIP 2017 is available on its webpage: https://sites.google.com/site/mipworkshop2017/ and you can also check out Twitter: https://twitter.com/hashtag/MIP2017?src=hash

The EUROPT Workshops on Advances in Continuous Optimization are the main annual event of EUROPT, the continuous optimization working group of EURO. EUROPT 2017 was the 15th in this series, and took place on July 12–14 at HEC Montréal. The scientific program featured three plenary speakers, Shabbir Ahmed, Timothy C. Y. Chan, and Francisco Facchinei, and the EUROPT Fellow Lecture given by Miguel F. Anjos, who was awarded the title of EUROPT Fellow in 2017. The program had more than 200 talks, including special sessions in memory of Jonathan M. Borwein, Roger Fletcher, and Christodoulos A. Floudas. More information about EUROPT 2017 is available on its webpage:

https://www.gerad.ca/colloques/europt2017/

and under #EUROPT17 on Twitter:

https://twitter.com/hashtag/EUROPT17?src=hash

A group photo of the MIP participants is here:

https://sites.google.com/site/mipworkshop2017/ /rsrc/1499621125886/home/Group.jpg

A group photo of the EUROPT participants is here:

https://www.gerad.ca/colloques/europt2017/images/picture-group-2017-07-13 EUROPT.jpg

A photo of Miguel Anios receiving the EUROPT Fellow award is here:

https://www.gerad.ca/collogues/europt2017/images/picture-Anjos-EUROPT-Fellow-Award.jpg



Montreal Student



Montreal Operations Research Student Chapter (MORSC) En: www.mtl-students.com, Fr: www.mtl-etudiants.com

After a fruitful 2016–2017, the Montréal Operations Research Student Chapter (MORSC) (www.mtl-students.com) concluded its year by hosting two events within Montreal's annual "Journées de l'optimisation" from May 8–10 (https://symposia.cirrelt.ca/JOPT2017/en/home). The first was the celebration of its one-year anniversary. MORSC was delighted to share its success with its members and the operations research community. Past president *Carlos Zetina* and past treasurer *Andrés Acevedo-Ojeda* spoke of the chapter's vision as an association **4 student x students** and discussed the growth and accomplishments seen during MORSC's inaugural year. The floor was then passed to *Dr. Bernard Gendron* (Université de Montréal) who gave an interactive presentation on applications of network design and dynamic facility location models. Concluding the ceremony, T-shirts designed by the winners of the chapter's **design contest** were given as tokens of appreciation to past speakers and active members who volunteered and helped in the chapter's growth.



Figure 1: Group picture after anniversary celebration





Figure 2: Winning design of T-shirts given as tokens of appreciation



Figure 3: Prof. Gendron presenting on Network Design and Facility Location



The second event within the conference was a speed networking activity in collaboration with Dr. Marilène Cherkesly, member of the chapter's faculty council and professor of the department of management and technology at Université du Québec à Montréal. The event's purpose was for student members to meet representatives of five companies who apply Operations Research in their activities; namely GE Global Research, GIRO, Ad Opt, Clear Destination, and HumanITas Solutions. The event began with each representative giving a brief overview of their company and the role Operations Research plays in their day to day. The student audience was then divided into 6 groups of at most 5 people. All groups were given between 5–7 minutes with each speaker through a timed round-robin process. The event concluded with a cocktail for the speakers and students to discuss further and exchange contact information.

Both these events were made possible thanks to the generous support of the conference's organizing committee, Dr. Nadia Lahrichi (Polytechnique Montréal) and Dr. Leandro Coelho (Université Laval), and the chapter's long time partners GERAD (www.gerad.ca) and CIRRELT (www.cirrelt.ca) and their helpful, efficient staff.

After 10 years of being held throughout North America, the MIP workshop made its way back to Montréal this past June (https://sites.google.com/site/mipworkshop2017/). Many local and international Operations Researchers took advantage of this amazing, free event. The concentration of knowledge and excellent Montréal weather led to an impromptu BBQ hosted by the chapter. Several workshop attendees, both students and established researchers from around the world gathered at Parc La Fontaine to share life stories and experiences while enjoying some Picanha grilled to perfection by Dr. Claudio Contardo, professor at Université du Québec à Montréal.



Figure 4: Impromptu MIP barbecue with students and researchers



At the end of the MIP workshop, the chapter in collaboration with IBM held a two day CPLEX training school (https://www.mtl-students.com/cplex-training-school). Pierre Bonami, Andrea Tramontani and Domenico Salvagnin from IBM instructed over 70 attendees on a variety of nuances within the software focusing mainly on utilizing cut callbacks. The school proved to be an enriching experience for all and a rare opportunity to discuss the software with the developers in person. The chapter gratefully acknowledges the support of Dr. Andrea Lodi (Polytechnique Montréal) and the Canada Excellence Research Chair in Data Science for Real-Time Decision Making (http://cerc-datascience.polymtl.ca/) for putting us in contact with IBM. We also thank GERAD and CIRRELT for their financial and administrative support, in particular Lucie L'Heureux and her behind the scenes magic which was invaluable in organizing this event.



Figure 5: Attendees working at the Cplex Training School

July brought the chapter's elections and so to conclude this piece, MORSC is proud to announce its new executive board for 2017–2018: President *Gabriel Vanasse*, Vice President *Hyame Alameddine*, Secretary *Amir Amini* and Treasurer *Golnar Kalantar*, and Faculty Advisor *Dr. Daria Terekhov* (Concordia University). The new team is excited and motivated to build on the amazing work done in the chapter's inaugural year. The new executive board promises MORSC members an overall experience which is tailored to their needs and demonstrates the true value of being a MORSC member. Stay tuned and follow the chapter's activities through its website and social media profiles to discover the benefits that you can get from being a MORSC member. Do not forget to volunteer and join (https://www.mtl-students.com/join-morsc) in building our Montréal Operations Research community.



MEETINGS AND CONFERENCES

CORS Business Meetings

July 20, 2017	CORS Council Meeting, Quebec City, QC
August 25, 2017	CORS Council Meeting, Teleconference
November 24, 2017	CORS Council Meeting, Teleconference
January 26, 2018	CORS Council Meeting, Toronto, ON
March 30, 2018	CORS Council Meeting, Teleconference
April 27, 2018	CORS Financial Planning Committee Meeting
May 11, 2018	CORS Council Meeting, Teleconference
June 3, 2018	CORS Council Meeting, Halifax, NS
June 4, 2018	CORS Council Meeting, Halifax, NS
June 5, 2018	CORS Annual General Meeting, Halifax, NS

CORS Annual Conferences

June 4–6, 2018 CORS Annual Conference, Halifax, NS

WWW Conference Listings

CORS Conference Page: www.cors.ca/?q=content/cors-annual-conferences INFORMS Conference Home Page: www.informs.org/attend-a-conference

IFORS Conferences: www.ifors.org/web

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

SIAM Conference Home Page: www.siam.org/meetings/calendar.php

POMS Conference Page: www.poms.org/conferences

EURO Conferences: 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 20**, **2017** 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 membershipservices@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 annual 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.

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

Website: www.cors.ca

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