The CORS Bulletin

Canadian Operational Research Society
Société canadienne de recherche opérationnelle

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IN THIS ISSUE

Dear CORS members,

Inside this issue of the Bulletin you will find the Call for Papers for the 2014 CORS Annual Conference, to be held in Ottawa, 26 to 28 May. See also the Call for Nominations for the 2014 CORS Service Award, to be awarded at the Annual Conference.

This issue also includes an unusually rich selection of opportunities for service to your Society. Calls for Nominations for the incoming Editor of *INFOR* and for the incoming Editor of the CORS Bulletin are contained within. We also have the Call for Nominations for positions on the 2014-2015 CORS Council. Please consider nominating yourself for any of these roles, or mention them to a colleague.

Be sure to read this issue's "OR at Work" article by Mozart Menezes and Vedat Verter on improving the collection of household recyclables for the City of Calgary. Additionally, we have SIG News and Section News from Calgary, Montréal, and a very busy Toronto Student Chapter.

Ideas for articles for future issues of the Bulletin are always welcome, so please contact me to discuss getting your ideas into print.

Cheers,

Diane Bischak
Editor

THE 2013–2014 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 of the Society, and the Standing Committee Chairs. Contact information for 2013–2014 Council representatives is provided below. For a complete listing go to www.cors.ca.

President	Corinne MacDonald, Dalhousie University, corinne.macdonald@dal.ca
Vice-President	Taraneh Sowlati, University of British Columbia, taraneh.sowlati@ubc.ca
Secretary	Dionne Aleman, University of Toronto, aleman@mie.utoronto.ca
Treasurer	Navneet Vidyarthi, Concordia University, navneetv@jmsb.concordia.ca
Past President	Elkafi Hassini, McMaster University, hassini@mcmaster.ca
Councillor	Diane Bischak, University of Calgary, diane.bischak@haskayne.ucalgary.ca
Councillor	Jonathan Patrick, University of Ottawa, patrick@tefler.uottawa.ca
Councillor	Xuan Zhao, Wilfrid Laurier University, xzhao@wlu.ca
Councillor	Robert Allie, Weston Foods, robert.allie@readybake.com
Atlantic	Claver Diallo, Dalhousie University, claver.diallo@dal.ca
Quebec	Irène Abi-Zeid, Université Laval, irene.abi-zeid@osd.ulaval.ca
Montréal	Louis-Martin Rousseau, École Polytechnique de Montréal, louis-martin.rousseau@polymtl.ca
Ottawa	Dragos Calitoiu, Bank of America, Ottawa, calitoiu@optimod.ca
Kingston	Jeffrey I. McGill, Queen's University, jmcgill@business.queensu.ca
Toronto	Joseph Milner, University of Toronto, milner@rotman.utoronto.ca
SW Ontario	Fredrik Odegaard, University of Western Ontario, fodegaard@ivey.uwo.ca
Winnipeg	Currently vacant
Saskatoon	Winfried Grassmann, University of Saskatchewan, grassman@cs.usask.ca
Calgary	Maurice Elliott, Husky Energy, maurice.elliott@huskyenergy.ca
Edmonton	Armann Ingolfsson, University of Alberta, armann.ingolfsson@ ualberta.ca
Vancouver	Stuart Donald, University of British Columbia, stuart.donald@sauder.ubc.ca
Toronto Student	Derya Demirtas, University of Toronto, demirtas@mie.utoronto.ca
Waterloo Student	Saul Qishu Cai, University of Waterloo, saulcai@hotmail.com

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THE 56TH CORS ANNUAL CONFERENCE
MAY 26–28, 2014, OTTAWA, ON

PRESIDENT'S MESSAGE

Dear CORS Members,

I started writing this message on the way to Ottawa for our one and only face-to-face Council meeting on February 1st. We decided to hold the meeting in Ottawa so that Councilor and Conference Program Co-chair Jonathan Patrick could give us a sneak peak at the conference hotel. They have picked a great location, as it is just a couple blocks from Parliament Hill. The Monday night reception in the revolving penthouse will be fantastic. Jonathan informed us that the program is already coming together well. The SIG tracks (Forestry, Health Care and Queueing) are once again looking to be very good this year. To help encourage student involvement, both the Forestry and the Queueing SIGs have introduced student paper competitions. I look forward to seeing many of you there May 26-28.

One conference event that I would like to highlight in this letter is the Practice Prize Competition. This is an opportunity for all CORS members, both industrial and academic, to showcase outstanding applied OR work to a national audience. Over the years I have seen some really outstanding applications, and I look forward to more this year. For more information on this program, please see our website: http://www.cors.ca/en/prizes/i_practice.php.

We heard from the INFORMS team (via Skype) responsible for the Certified Analytics Professional (CAP) exam. We have agreed that given the significant work that INFORMS has done, and the administrative load of managing such a program, that our best move is to support and endorse their program. We do need to consider what our long term analytics plan will be; therefore, Elkafi Hassini will head up an ad-hoc committee to consider this issue. If you have any thoughts on the matter, please feel free to communicate with us.

Finally, although many things are going on with Council right now, we are also starting to think about next year. Calls for nominations for CORS positions in the 2014-15 year are included in this issue of the Bulletin. Please take a moment and consider getting involved with the society, either at a local or a national level. I must say I have really enjoyed my involvement, and would encourage others to give it a try. Think about it!

All the best,

Corinne MacDonald

ANNOUNCEMENTS

It's time to renew your CORS membership

Don't forget to renew your CORS Membership.

Go to http://www.cors.ca to renew online using your VISA© or MasterCard© or AMEX© credit card

OR

Mail your credit card information or a cheque payable to the Canadian Operational Research Society to CORS-SCRO, Box/C.P. 2225, Station D, Ottawa, ON K1P 5W4.

If you do not wish to continue as a member of the Society, please contact Erla Anderson at erla@shaw.ca.

CALL FOR NOMINATIONS

2014–2015 Council Positions

The following positions are open for the 2014–2015 CORS Council:

• Vice-President (President Elect)
• Two Councillors (Two-year term)
• Secretary
• Treasurer

Please send your nominations by **March 15, 2014** to:

Elkafi Hassini
DeGroote School of Business
McMaster University
E-mail: hassini@mcmaster.ca

INFOR Editor

The Canadian Operational Research Society Publications Committee invites nominations for Editor of the Society's journal, INFOR, to succeed the current editor, Bernard Gendron, whose term will end in May of 2014.

INFOR is published by the Canadian Operational Research Society. It provides readers with articles on a powerful combination of subjects: Information Systems and Operational Research. The importance of combining IS and OR in one journal is that both aim to expand quantitative scientific approaches to management. With this integration, the theory, methodology, and practice of OR and IS are thoroughly examined. Please see any recent issue of INFOR for more detailed information on types of articles published.

Nominees should be ready to join CORS before taking office, if they are not already a member of the Society, and should be prepared to begin receiving manuscripts in May 2014. Criteria to be considered in selecting the editor will include:

• Comprehensive knowledge and broad perspective of the field of operational research
• Professional accomplishment, demonstrated research, writing, reviewing, and editing skills
• Commitment to editorial duties
• Ability to lead a publication that includes articles in both official languages.

To nominate a candidate, please provide a brief statement in support of the candidate. Supporting material may also be sent, including curricula vitae and brief statements by nominees of their ideas on future directions for the journal.

Nominations should be sent by **March 10, 2014** to:

Taraneh Sowlati, CORS Vice-President
Professor, Department of Wood Science
University of British Columbia
Tel: 604-822-6109
E-mail: taraneh.sowlati@ubc.ca

CORS Bulletin Editor

The Canadian Operational Research Society Publications Committee invites nominations for Editor of the Society's Bulletin, to succeed the current editor, Diane Bischak, whose term will end in February of 2014. The CORS Bulletin provides the Society's members with articles and news on the activities of the Society and its local sections. Please see any recent issue of the Bulletin for more detailed information on types of articles published. Nominees should be ready to join CORS before taking office, if they are not already a member of the Society.

Criteria to be considered in selecting the editor will include:
• Expertise in operational research
• Writing, reviewing, and editing skills
• Commitment to editorial duties
• Ability to lead a publication that includes articles in both official languages.

To nominate a candidate, please provide a brief statement in support of the candidate. Supporting material may also be sent, including curricula vitae. Nominations should be sent to:

Bernard Gendron, Publications Chair
Professor, DIRO / CIRRELT
Université de Montréal
Tel: 514-343-7479
E-mail: Bernard.Gendron@cirrelt.ca

2014 CORS Service Award

If you know of anyone who has dedicated their time to CORS and who has a longstanding service record, please consider nominating him or her for the CORS Service Award. CORS Council urges all local sections to consider and nominate their best candidates. Nominations should include the candidate's name, activities, positions and corresponding years of service. The Awards Committee will evaluate the submissions and bring forward potential recipients to Council for approval. Nominees will be evaluated based on a point system shown in the table below. As a guideline, winners should have 2000 or more points. Previous winners are not eligible for additional service awards. A list of past CORS Service Award recipients may be found at: http://www.cors.ca/en/prizes/i_service.php.

Please submit nominations before **March 10, 2014** to:

Taraneh Sowlati, CORS Awards Committee Chair
Professor, Department of Wood Science
University of British Columbia
E-mail : taraneh.sowlati@ubc.ca

Service Award Point System

Responsibility	Point Value
CORS Council	
President	500
Vice-President	350
Secretary	300
Treasurer	300
Councillor	250
Appointed	200
Past-President	150
International Conference	
Conference Chair	350
Committee Chair	300
Committee Member	200
National Conference	
Conference Chair	300
Committee Chair	250
Committee Member	200
Publications	
Bulletin Editor	350
INFOR Editor	350
Special Editions	150
Others	200
Local Council	
President	350
Vice-President	250
Secretary	200
Treasurer	200
Others	150
Past-President	100
Miscellaneous	
IFORS Executive	250

University of Ottawa

École de gestion
TELFER
School of Management

Canadian Operational Research Society
Société Canadienne de Recherche Opérationnelle

THE 56TH CORS ANNUAL CONFERENCE
MAY 26–28, 2014

Hosted by the Telfer School of Management at the University of Ottawa

On behalf of the 2014 CORS conference organizing committee, it is my pleasure to invite you to join us in Canada's beautiful capital city, Ottawa, for the national meeting May 26–28, 2014.
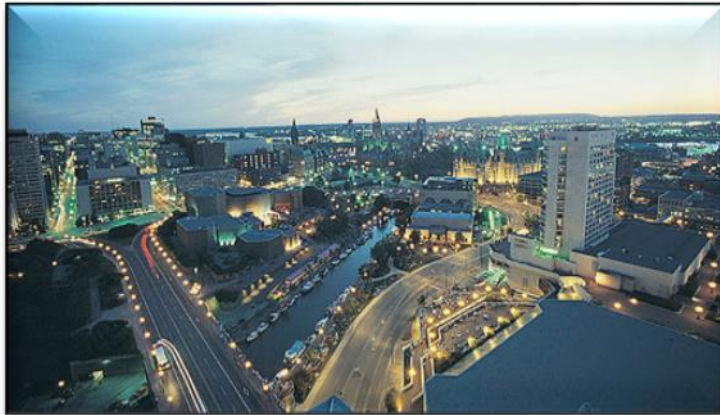
Photo: National Capital Commission

Nestled on the banks of the majestic Ottawa, Rideau and Gatineau Rivers, Ottawa is one of the most beautiful G8 capitals in the world. A thriving international technology and business centre and world class tourism and convention destination, Ottawa is also rich in institutions, parklands, waterways and historic architecture. It is home to a large number of foreign embassies and is a recognized centre for both academics and professional training. The city offers an open and welcoming environment to cultures from around the world, providing service in English, French, and a host of other languages. The city's residents enjoy an enviable quality of life that is recognized around the world.

Ottawa is centrally-located in the province of Ontario, with the award-winning Ottawa International Airport offering daily direct connections to over 30 Canadian, U.S. and European Centres. The capital is also serviced by Canada's train service, VIA Rail, and accessible by a number of major highways. The airport is just a 15-minute shuttle ride from downtown Ottawa, and the city's downtown is remarkably compact and walkable.

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Quick Facts

- A population of over 1.2 million makes the Ottawa region the fourth-largest urban area in Canada
- More than 1,800 advanced technology companies employ more than 76,000 people
- Canada's Capital region welcomes over 7.3 million visitors per year, who spend over $1.18 billion

The 2014 conference will be held at the Ottawa Marriott Hotel. Conveniently located in downtown Ottawa, it is just steps from Parliament Hill, the Rideau Canal, By Ward Market, restaurants, museums and many more attractions.

Ottawa Marriott Hotel
100 Kent St., Ottawa, ON K1P 5R7
(613) 238-1122
$172 per night.
Includes complimentary Wi-Fi in all guest rooms.

Book your group rate: CORS CONFERENCE RFQ 2014

If you prefer to make your reservation by telephone call 1-800-853-8463 and mention the group code "CORCORG".
Hotel reservations should be made before the cut-off date which is April 25 2014. Any reservations received after this date will be accepted based on room type availability at time of request, at the Hotel's prevailing rate of the day.
Ottawa Tourism www.ottawatourism.ca
 Gatineau Tourism www.tourismeoutaouais.com

Please feel free to contact me at rene.seguin@drdc-rddc.gc.ca if you are interested in organizing a cluster or session, or submitting a paper.

Dr. René Séguin, General Chair
Center for Operational Research and Analysis
Defence Research and Development Canada
Government of Canada
E-mail: rene.seguin@drdc-rddc.gc.ca

For more information, including registration, fees, and abstract submission, please check the conference website, www.telfer.uottawa.ca/CORS2014 .

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GRADUATE STUDENT FUNDING TO ATTEND CORS CONFERENCES

CORS funds graduate students attending CORS annual meetings, using funds from SSHRC, when available. This funding is subject to availability and the following eligibility criteria:

- Student is a member of CORS
- Student is enrolled in a graduate program in a field related to operational research
- Student is studying at a Canadian university, or student is a Canadian citizen or permanent resident studying abroad

The following criteria will be used to determine the amount awarded to each eligible applicant:

- Whether the applicant is presenting a paper at the conference.
- Travel cost from student's home city to the conference.

Instructions

Fill out the competition Application Form (www.cors.ca)

Applications must be received by **March 15, 2014** to receive full consideration. Applicants who meet this deadline will be notified at least one month before the conference date whether their application was successful.

For further information, contact the CORS Education Chair:

Mehmet Begen
Tel: (519) 661-4146
E-mail: mbegen@ivey.uwo.ca

2014 CORS PRACTICE PRIZE COMPETITION

The Practice Prize Competition recognizes the outstanding application of OR by practitioners in Canada and it attracts quality papers to the CORS Annual Conference.

Award
The Prize Committee will determine, at its discretion, First, Second and Honourable Mention awards and the distribution of up to $1800 in prize money according to the extent to which the finalists have reported on a completed, practical application with results that had a significant, verifiable and (preferably) quantifiable impact on the performance of the client organization. Every member of the winning teams receives a certificate.

Eligibility
The applicant must be a resident of Canada. The submission must include work completed over the last two years, but the entire project may have taken place over a longer period. The project may include published work, but it cannot have been previously submitted to this competition.

The Process
By **February 28, 2014** submit e-copies of the following to Rick Caron (rcaron@uwindsor.ca):
   1. An abstract, not exceeding 500 words, outlining the successful application of OR.
   2. A letter from an executive of the client organization attesting that the application had an impact and giving permission for the project to be presented at the CORS Annual Conference.
   3. The names, titles, phone numbers and e-mail addresses of all authors and of at least one executive of the client organization.
By **March 31, 2014** the Judging Committee, consisting of three past winners of the Practice Prize, will select up to four finalists according to the following criteria:
   1. The challenge of the application of OR and the significance of the problem.
   2. The quality of the analysis and modeling, and implementation of the results.
   3. The impact on the client organization.
By **April 30, 2014** the finalists must:
   1. Submit a detailed written report, not exceeding 25 pages in the body, presenting a "case history" of the project describing its development from start to finish and focussing on the challenges and results.
   2. Submit a one page project summary, suitable for publication in the CORS Bulletin and on the CORS website.
   3. Present the project at the Practice Prize Sessions at the CORS National Conference (May 26-28, 2014) in Ottawa.

On the basis of the written report and the oral presentation the judges will determine the prizes to be awarded and announced at the banquet. The committee reserves the right not to award any prize.

Rick Caron, Chair of the Practice Prize Committee.
Department of Mathematics and Statistics, University of Windsor
rcaron@uwindsor.ca

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THE 56TH CORS ANNUAL CONFERENCE
MAY 26–28, 2014, OTTAWA, ON

CORS SECTIONS NEWS

Toronto Student

CORS/INFORMS Toronto Student Chapter held 8 academic and 5 social events since September 2013, including:

- "An Improvised Approach to Robustness in Linear Optimization", Professor Levent Tunçel, University of Waterloo (September 19),
- Latex Workshop, Professor Dionne Aleman, University of Toronto (September 24),
- "Piecewise Linear Integer Multicommodity Network Flow Problem", Professor Bernard Gendron, CIRRELT and Université de Montréal (October 16),
- "The Combat Salvo Models", Professor Michael Armstrong, Brock University (November 13),
- "Automated Inference of Graph Models", Professor Ventresca, Purdue University (November 26),
- "Hybridizing Mixed Integer and Constraint Programming", Professor Chris Beck, University of Toronto (December 6).

The Toronto Chapter is looking forward to having many interesting events in 2014. Our most upcoming events include:

- Distinguished talk by Rebecca Boren, National Security Agency (NSA),

- TORCH 2014 -- CORS/INFORMS Toronto Student Chapter provides support to the Fourth Annual Operations Research Challenge (TORCH 2014) which will be held at the Department of Mechanical & Industrial Engineering (MIE), University of Toronto. TORCH is a one-day contest where high school student teams solve problems related to operations research. It aims to get high school students interested in operations research and intelligent decision making. The competition will take place on Saturday, March 15th, 2014. Please visit http://orchallenge.org/ for details.

Please visit our website org.mie.utoronto.ca/ for upcoming events and to become a member.

Derya Demirtas, Chair

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Montréal

The Montréal Section hosted the following seminar:

GERAD

Title	Optimizing Data Placement for Distributed Computation
Speakers	GOLAB, Lukasz (University of Waterloo, Canada)
Date	Thursday, February 27, 2014
Time	03h45 PM
Place	Salle 4488, Pavillon André-Aisenstadt
	Campus de l'Université de Montréal
	2920, chemin de la Tour

Abstract

I will discuss the following problem: given a set of data items, a set of tasks that reference these data items, and a set of servers with finite storage and processing capacities, allocate the data items to the servers in a way that minimizes the amount of data that needs to be transferred among servers during task execution. This problem arises in many practical scenarios including cloud databases. I will show that this problem can be reduced to the well-studied graph partitioning problem, which is NP-hard, but for which efficient approximation algorithms exist. I will also discuss how to handle load balancing and data replication. This is joint work with Marios Hadjieleftheriou (AT&T), Howard Karloff (Yahoo!) and Barna Saha (AT&T).

Ce séminaire vous permettra d'échanger avec le conférencier et les chercheurs présents autour de boissons et de collations.
Nous vous remercions de confirmer votre présence.

This seminar will give you the opportunity to meet the speaker and all the researchers in attendance while enjoying drinks and snacks.
We would highly appreciate if you could confirm your attendance.

Organizer	Miguel F. Anjos (miguel-f.anjos@polymtl.ca)

http://www.gerad.ca/en/activities/seminar.php?id=1020

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Calgary

The Calgary Section has held two seminars:

November 20, 2013 - Glen Phillips from WestJet spoke about Simulating Aircraft Flow in WestJet's Network

January 16, 2014 - Tom Morrison and Paul Spencer from Ausenco spoke about an Introduction to Quantile Regression – Analyzing the Complicated Relationship Between Ice Failure Pressure and Area.

CORS SPECIAL INTEREST GROUPS

CORS Council recently 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 Queueing Theory SIG: contact Doug Down (downd@univmail.cis.mcmaster.ca, McMaster University, Department of Computing and Software).
- CORS Health Care Operational Research SIG: contact John Blake (john.blake@dal.ca, Dalhousie University, Department of Industrial Engineering).
- CORS Forestry SIG: contact Jean-François Audy (Jean-Francois.Audy@cirrelt.ca, Researcher & Network Liaison Manager at the NSERC Strategic Research Network on Value Chain Optimization), or go to http://cors-forestrysig.pieorswirls.com/.

If you would like to join a SIG, contact the persons listed above, or simply 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 http://www.cors.ca/en/membership/index.php. Discussions are underway about forming SIGs in several additional areas. If you are interested in forming a SIG in a particular area, then feel free to contact the CORS SIG Committee Chair: Taraneh Sowlati (taraneh.sowlati@ubc.ca).

CORS SIG NEWS

Forestry

The CORS Forestry SIG and this year's OR in Forestry Cluster Chair, Mikael Rönnqvist (Université Laval), kindly invite you to present or chair a session at the 2014 CORS Annual Conference. Based on the cluster program of previous successful editions, the following sessions are proposed:

- Forest Fire Management
- Forest Management Planning under Uncertainty
- Forest Management Planning Decision Support Systems
- OR Applications in Forestry
- OR in the Forest Products Sector
- Management of Forest Value Chains
- Transportation and Wood Handling
- Emerging Applications in the Forest Products Industry

Propositions for other forestry session topics are welcome as well, and we are looking for session chairs, especially new volunteers and junior researchers.

Moreover, thanks to the support from the NSERC Strategic Research Network on Value Chain Optimization (www.vconetwork.ca), two special events will be held during the OR in Forestry Cluster: i) a tutorial & a set of discussion sessions on the challenges and experiences in implementing OR for solving industrial problems in forest value chain and, ii) a presentation session by the finalists of the David Martell Student Paper Prize in Forestry (Best 2014 Student Paper Competition of the Forestry SIG).

If you would like to join the Forestry SIG, please contact Jean-François Audy (jean-francois.audy@cirrelt.ca).

Queueing

We have a strong lineup of sessions for the Queueing Cluster at the upcoming Ottawa meeting. In addition to enjoying the talks, please join us at our Business Meeting, where the winner of the Second Annual Student Paper Prize will be announced.

The 15th Annual Conference of Canadian Queueing Theorists and Practitioners (CanQueue) will take place at Simon Fraser University on August 15th and 16th, 2014. Inquiries about the conference should be directed to George Zhang (gzhang@sfu.edu).

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ARTICLES

OR at Work

Improving the collection of household recyclables at the City of Calgary

by Mozart B.C. Menezes and Vedat Verter

Every week, the City of Calgary, through the Waste and Recycling Services Department (W&R), collects recyclables from nearly 300,000 households. This requires 27,000 km of travel every week for W&R's trucks, that is, 1.4 million km annually. Nearly 30% of the travel involves the movement of empty trucks from the Materials Recycling Facility (MRF) to the collection route and the return travel of full trucks. From the perspective of collection, this can be considered as a non-value added activity.

Ms. Melanie Cooke, the Manager of Strategic Services, was looking for opportunities for improved efficiency in the household recyclable collection process. To this end, she and Christy Lyon, the Manager of Collection Services, wanted to better understand the potential for improving the collection services. Ms. Lyon is responsible for ensuring that the collection trucks operate four days a week in a seamless fashion. Our project focused on the possible operational benefits of building new *transfer stations* as well as their impact on the CO_2 emissions generated by the so-called non-value activities.

Transfer facilities are small facilities that are not equipped to treat recyclables. Their main function is for the consolidation of loads and better use of technology (i.e., different types of trucks). For example, trucks on a particular collection route may end up only ¾ full, not fully utilizing the truck capacity. Also collection trucks are built for collecting recyclables (i.e., they have a mechanical arm to retrieve the blue carts) but are not very efficient for transporting the recyclables back to the MRF and travelling empty to the next route. A truck that does not have the mechanical arm has more space for the material collected. A typical collection truck holds no more than 6 metric tons of recyclables while regular trucks, with 24-ton capacity, are more common, providing an opportunity for a 4-fold increase in capacity and, thus, improved efficiency.
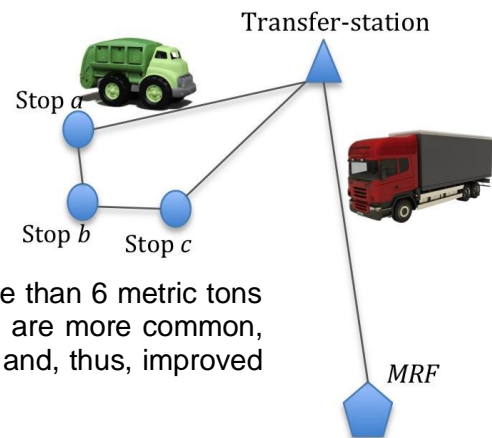
As depicted in the Figure, we studied the use of different trucks for collection and transfer to MRF and evaluated how possible changes on the design of the W&R logistics network could improve the performance of the logistics system when compared to the status quo.

Our calculations suggest that, by using 12-ton trucks for the shipments between the transfer station and MRF, savings of nearly 135,000 km could be achieved every year by opening a single transfer station. Using 24-ton trucks, opening one transfer station could result in savings of approximately 166,000 km per year, whereas 230,000 km of travel can be saved if three facilities were opened. In order to put this into perspective, fuel accounts for over 10% of the W&R operational budget. If equipment costs are included as well, then the total cost accounts for about half of the operational budget. Thus, the establishment of transfer stations can result in potential savings of 12%-14% of the operational budget, excluding the cost of constructing the transfer stations that could certainly be built on city-owned real estate.

Using a conservative estimate of 1kg of CO_2 per km [1], the city could reduce its CO_2 emissions by approximately 200 tons annually … while still recycling over 56,000 tons of household items. Note that estimates from the European Environment Agency [2] on emissions double that rate!

- Mozart Menezes is an Associate Professor of Operations and Supply Chain Management at the Haskayne School of Business, University of Calgary, and Vedat Verter is James McGill Professor of Operations Management at Desautels Faculty of Management, McGill University. The authors appreciate the support of Dave Griffiths, Director of Waste & Recycling Services, Melanie Cooke and Christy Lyon in conducting this project.

References:

[1] http://timeforchange.org
[2] http://www.eea.europa.eu/data-and-maps/figures/estimated-specific-emissions-of-co2

MEETINGS AND CONFERENCES

CORS Business Meetings

March 28, 2014	CORS Council Meeting, Teleconference
April 25, 2014	CORS Financial Planning Committee Meeting
May 25, 2014	CORS Council Meeting, Ottawa, ON
May 26, 2014	CORS Council Meeting, Ottawa, ON
May 27, 2014	CORS Annual General Meeting, Ottawa, ON

CORS Annual Conferences

May 26–28, 2014	CORS Annual Conference
	Ottawa Marriott Hotel, Ottawa, ON
June 14–17, 2015	CORS Annual Conference – joint with INFORMS
	Le Centre Sheraton Hotel, Montreal, QC
2016	To be announced
July 2017	CORS Annual Conference, Quebec City, QC – joint with IFORS

Other Conferences

2014 March 6–8	ICORES 2014 – 3rd International Conference on Operations Research and Enterprise Systems, Angers, Loire Valley, France http://www.icores.org/
2014 May 9-12	POMS 2014 Annual Conference, Atlanta, GA
2014 July 13–18	IFORS (International Federation of Operational Research Societies) "The Art of Modeling", 20th Conference, Barcelona, Spain http://www.ifors2014.org/
2014 Nov. 9–12	INFORMS 2014, San Francisco, CA

WWW Conference Listings

CORS-SCRO Conference Page: http://www.cors.ca/en/conferences/i_other.php

INFORMS Conference Home Page: http://www.informs.org/Conf/Conf.html

IFORS Conferences: http://www.ifors.org/panorama/conferences/index.shtml

Netlib Conferences Database: http://www.netlib.org/confdb/Conferences.html

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

POMS Conference Page: http://www.poms.org/conferences/

CORS FUNDING OPPORTUNITIES

Graduate Student Conference Support (GSCS) Program

CORS has established the GSCS program to encourage attendance of graduate students at conferences, symposia, or workshops specifically aimed at graduate students, such as student conferences, doctoral colloquia, and conferences for junior operations researchers. CORS may provide partial funding up to $500 per student for attendance at such events. Note that the GSCS program will *not* fund attendance at CORS meetings, because CORS has a separate program for this purpose. All GSCS funding is subject to availability of funds and the following eligibility criteria:

- Student is a member of CORS.
- Student's supervisor is a member of CORS.
- Student is enrolled in a graduate program in a field related to operational research.
- Student is studying at a Canadian university, or is a Canadian citizen or permanent resident studying abroad.

The application process is competitive. The following criteria will be used to select applications that will be funded:

- The quality of the paper to be presented at the conference, if applicable.
- The benefits that the student is likely to derive from attending the conference.
- The stage that the student has reached in his/her degree program.
- Prior GSCS funding received by the applicant (new applicants will be given preference, all else being equal).

An online application form for GSCS funding is available at
http://www.cors.ca/en/students/i_graduate.php

Since funding is limited, applicants are encouraged to submit their applications in a timely manner. Applications must be received at least two months before the conference date to receive full consideration. Applicants who meet this deadline will be notified of the outcome of their application at least one month before the conference date. For further information, contact:

Mehmet Begen, CORS GSCS Coordinator
E-mail: mbegen@ivey.uwo.ca

INFORMS Teaching Effectiveness Colloquium (For Faculty)

In conjunction with the Annual INFORMS Meetings, INFORMS hosts a Teaching Effectiveness Colloquium. CORS has funding available to partially support a limited number of faculty members interested in attending. Faculty members that are awarded funding are expected to:

- give a presentation in an OR/MS Education session at CORS National Meeting, and
- write a short article regarding OR/MS education for the CORS Bulletin.

Funding is restricted to faculty members and is not available to graduate students. For more information and instructions on how to apply please contact:

Mehmet Begen, CORS Education Chair
E-mail: mbegen@ivey.uwo.ca

CORS 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 report.

Elkafi Hassini, CORS TSP Coordinator
E-mail: hassini@mcmaster.ca

THE NEXT ISSUE

The next issue of the Bulletin is scheduled to appear in February. Along with the regular features and news from the local sections, it will contain 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 **March 17, 2014** to:

> Diane Bischak
> Editor, CORS-SCRO Bulletin
> Haskayne School of Business
> University of Calgary
> Calgary, AB T2N 1N4
> Phone: 403-220-3368
> E-mail: diane.bischak@haskayne.ucalgary.ca

The preferred method of submission is by an MS-Word attachment to an e-mail.

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, e-mail Erla Anderson, CORS Membership Services at erla@shaw.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 award ceremony, occasionally organized jointly with an international society (IFORS, INFORMS), as well as numerous local events organized by the local sections.

Local Sections: CORS has twelve local sections located throughout Canada and three student sections.

Awards and Prizes: CORS presents the following annual Awards and Prizes at its National Conference:

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

Harold Larnder Memorial 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 conferences, symposia, or workshops 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 and an example certificate 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 (www.cors.ca) and join online by credit card using the form found under membership services 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 (including post-doctoral fellows) $45

Website: http://www.cors.ca