

Volume 31 Number 3

August 1997

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In This Issue

In this issue of the Bulletin, we feature an invited article by Gilles Cormier entitled, "A Brief Survey of Operations Research Models for Warehouse Design and Operation." This article is the third in our series highlighting O.R. activity across Canada. If you have suggestions for future articles, please pass them along.

On this page you will also see the new list of elected officers, councilors, and committee chairs. The changes were effective with the Annual General Meeting held in Ottawa. Also from the AGM, this issue contains the Society's financial statements on pages 11 - 14.

One of the highlights of our Annual National Conference is the presentation of our awards and prizes. The 1996/97 winners are listed on page 8.

I hope you enjoy the Bulletin. Send comments to me at rcaron@uwindsor.ca.

Be sure to visit the CORS web site at <http://www.cs.uwindsor.ca/cors/>. By the way, we have applied for the new WWW addresses www.cors.ca and www.scro.ca. I'll let you know when the change takes place.

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The 1997/98 Council

Your 1997/98 Council, which is made up of the Officers of the Society, the Elected Councilors, and the Section Presidents, is given below. This information, together with complete mailing addresses, can be found at the CORS WWW site.

Le Conseil 1997/98

Le Conseil 1997/98 de la Société se compose des officiers de la Société, des conseillers élus et des présidents des sections locales, tel qu'indiqué ci-dessous. Cette information, ainsi que les adresses complètes des membres du Conseil, est disponible sur le site WWW de la SCRO.

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Address of the Outgoing President: Michel Gendreau

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Chers amis membres de la SCRO,

Je veux tout d'abord remercier les membres du comité organisateur de ce 39^e Congrès annuel de la SCRO pour tout le temps et les efforts qu'ils ont consacrés à l'organisation de ce congrès afin d'en faire une réussite. Je veux remercier en particulier Surendra Rawat, président du congrès, Darren Meister, président du comité de programme, et Hussein Mouftah, co-président du programme pour IEEE.

C'est maintenant le moment de dresser le bilan de l'année qui s'achève. Celle-ci a débuté de façon spectaculaire avec le congrès conjoint IFORS/SCRO de Vancouver auquel près de 1000 participants ont assisté. Les profits de ce congrès ont été les plus importants jamais réalisés dans le cadre d'une activité de la SCRO. Ces profits auront un impact des plus significatifs sur la santé financière de la Société pour plusieurs années à venir.

Cette dernière année a été, pour l'essentiel une année de consolidation et de rajeunissement des structures de la SCRO. Nous avons mis en branle ou poursuivi plusieurs actions qui visent à préparer la Société à faire face aux défis du 21^e siècle:

- La nouvelle brochure décrivant la recherche opérationnelle et la SCRO est maintenant disponible pour tous ceux qui en font la demande.
- Le programme du Diplôme de la SCRO est de plus en plus populaire: de nouvelles institutions participent maintenant au programme, et le nombre de diplômes décernés a considérablement augmenté.
- Les modifications proposées aux procédures d'attribution de fonds aux sections locales permettront aux petites sections d'augmenter leurs activités et leur visibilité.
- L'élimination des différentes catégories de membres permettra, si elle est acceptée, de simplifier les opérations de la Société, tout en reflétant mieux l'état actuel de la pratique de la R.O. au Canada.
- L'infrastructure administrative de la Société est en cours de réorganisation complète afin d'assurer aux membres un service prompt et efficace.

À ce sujet, voici quelques détails sur ce processus de réorganisation. Depuis plusieurs années, de nombreux services de base, tels que la facturation, les envois postaux, etc., ont été assurés bénévolement par des membres qui donnaient généreusement de leur temps à la Société. Lors de sa réunion de mars dernier, le Conseil a dû faire face au fait que cette situation ne pouvait se poursuivre indéfiniment. Il fut donc décidé d'avoir recours à des services professionnels rémunérés pour exécuter ces tâches ainsi que procéder à une mise à jour complète du système informatique de la SCRO. La première étape de cette démarche est la restructuration de la base de données sur les membres et la programmation de nouvelles procédures pour l'exploiter. Cette étape est en cours. À vous de continuer à voir sous peu les retombées positives.

Dear CORS fellow members,

Let me first thank the organizing committee of this 39th CORS Annual Conference for all the time and effort they have devoted in order to make it a great conference. Special thanks to Surendra Rawat, Conference Chair, to Darren Meister, Technical Program Chair, and to Hussein Mouftah, IEEE Program Co-chair.

This is now the time to look back to the past year and to see what has been accomplished. This year has opened up in a very exciting fashion with the Vancouver joint IFORS/CORS Conference that was attended by close to 1000 participants. The profits of this conference were the largest ever for a CORS event; this will have a very significant impact on the financial health of the Society for several years to come.

Apart from this, the last year has been in many ways a year of consolidation and modernization of CORS structures. Many changes have been initiated or pursued to prepare the Society to face the challenges of the 21st century:

- The new brochure describing operational research and CORS is now widely available.
- The Diploma program is more popular than ever: new institutions are joining the program and the number of diplomas awarded has risen steadily.
- The modifications proposed to the fund allocation procedures to local sections should allow smaller sections to be more active and visible.
- The changes that we are putting forward to the membership structure should simplify the Society's operations and provide a better picture of current O.R. practice in Canada.
- The administrative infrastructure of the Society is being completely revamped to ensure prompt and efficient service to the members.

Regarding this last item, I would like to provide you with more details. For many years, some CORS members have benevolently devoted an awful lot of time to provide the membership with basic services, such as billings, mailings, etc. At its March meeting, Council had to face the fact that this situation could not go on for ever; it thus decided that paid professional help was required to perform these tasks and to bring CORS' computer system up to date. The first step in this direction is the restructure of the membership database and the programming of a new set of routines to handle this

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Good afternoon CORS and IEEE members. I hope you are enjoying your stay in Ottawa and that you have found the conference worthwhile so far. It is a great honour for me to be your new president. I have always supported CORS and hope to lead it as well as the past presidents.

First, I want to thank Michel, as outgoing President, of the tremendous job he has accomplished over the last year. It was an honour and a privilege to work with him during that period. I also want to thank very warmly the outgoing Council, in particular those who are now completing their term of service: Past President David Stanford who has provided fatherly advice and guidance; thank you David; to Richard Caron for his work on the Web site and as Editor of the Bulletin, and to Marvin Mandelbaum for leading the rewrite of our constitution to eliminate associate members and have only members of the Society. A special thanks goes to John Meijer, who has done an outstanding job as Treasurer, keeping us up-to-date on the budget and finances, and providing a very fast turnaround. Finally, I would like to extend my deepest appreciation to Laura Logan who has served as Secretary for as long as I have been on Council. Thanks Laura for your laughter, for your dedication, for guiding us on Council, and for providing the continuity and the long term memory of Council's decisions. You will be missed dearly.

I am also extremely grateful to the members who have volunteered to serve on the 1997-98 Council: Richard Caron who will be the new vice-president, John Blake who will take over as Treasurer, to Erhan Erkut and Surendra Rawat who will continue for their second year on council and to the new Councilors Bernard Lamond and David Martell.

As new President, my priorities will be to continue the efforts of my predecessors to achieve greater visibility of O.R. as a profession and of CORS as our representative society. This past year we have seen new brochures printed, our Web Page has been active and the Diploma program is a success and being expanded to more universities.

One of my priorities is to actively pursue ways to develop CORS as a well integrated O.R. community. Too often the people involved in the development of theory and in the practice

of O.R. seem to live in separate worlds. At our local meetings, I find that our members at universities are looking for real-world problems to solve, while practitioners in Industry and Government are not sure where to turn for help in solving problems. This is an area where I believe CORS has a very special role to play. We can set up workshops at the local Section level to

Chers amis de la SCRO et de IEEE. J'espère que votre séjour à Ottawa est agréable et que vous avez trouver le congrès valable. C'est un grand honneur pour moi d'être élu Président de la SCRO. J'ai toujours encouragé le bien être de la SCRO et j'espère pouvoir diriger la Société aussi bien que les présidents antérieurs.

Permettez-moi tout d'abord de remercier Michel, notre président sortant, pour le travail exceptionnel qu'il a accompli au cours de la dernière année. Ce fut un honneur et un privilège de travailler avec lui durant ce temps. Je veux aussi remercier très chaleureusement les membres du Conseil sortant, en particulier ceux dont le mandat s'achève: Le Président ex-officio David Stanford pour ses conseils paternels et ses opinions; merci David. Merci à Richard Caron pour devenir le nouveau vice-président, à Marvin Mandelbaum pour la rédaction des changements dans la constitution afin d'éliminer la distinction entre membre associé et membre de la Société et à Erhan Erkut et Surendra Rawat qui compléteront la seconde année de leur mandat. Tous mes remerciements à John Meijer pour son travail exceptionnel comme trésorier, nous informant du budget et des finances et pour ses actions rapides. Je veux finalement exprimer ma gratitude la plus sincère a Laura Logan qui a servi comme secrétaire pendant tout mon mandat au Conseil. Merci Laura pour ton sourire, pour ta dévotion, pour avoir guider les membres du Conseil, et pour avoir été la constance et la mémoire collective du Conseil pour nos décisions. Ton absence sera très remarquée.

Je veux aussi exprimer ma gratitude la plus vive aux membres qui se sont portés volontaires pour faire parti du conseil 1997-98. Richard Caron qui devient le nouveau Vice-Président, John Blake qui prends la relève comme trésorier, à Erhan Erkut et Surendra Rawat qui compléteront la seconde année de leur mandat et au nouveau conseillers Bernard Lamond et David Martell.

Mes priorités comme nouveau Président seront de continuer les efforts de mes prédécesseurs et d'améliorer la visibilité de la R.O. comme profession et de la SCRO comme notre société représentative. Pendant l'année qui finit, nous avons eus de nouvelles brochures, notre page sur le Web a été très active et le programme du diplôme est un succès et est en pleine expansion dans d'autres universités.

Une de mes priorités sera de poursuivre activement le développement de la SCRO en une communauté intégrée de la R.O. Trop souvent les gens engagés au développement de la théorie et ceux engagés dans la

pratique vivent dans deux mondes différents. Dans nos rencontres locales, nos membres cherchent à résoudre des problèmes réels, tandis que les praticiens au gouvernement et dans l'industrie sont incertains où trouver l'aide nécessaire pour résoudre leurs problèmes. C'est là que je vois le rôle spécial de la SCRO. Nous pouvons organiser des ateliers dans nos

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1996/97 CORS Awards

Congratulations to the following winners of our various awards and prizes.

The Larnder Lecturer	George B. Dantzig, Stanford University
The CORS Award of Merit	Pierre Hansen, École des H. E. C.
The Omond Solandt Award	Canada Post, Award accepted by Tom Charlton, V. P. Mail Operations
The CORS Service Award	Wade Cook, York University François Julien, University of Ottawa David Stanford, University of Western Ontario
The CORS Practice Prize	Paul Comeau, Air Transport Group Headquarters, Astra, Ontario, "DSS TANKER - A Fuel Management Model For Air Transport Group".
The CORS Student Paper Prize	Steve Chamberland, Mathematics and Industrial Engineering, École Polytechnique de Montréal, "Topological Design of Two Level Telecommunication Networks with Modular Switches".

The last issue of this Bulletin (Volume 31, Number 2) highlighted the accomplishments of George B. Dantzig, the 1997 Larnder Lecturer. Unfortunately, Dr. Dantzig was unable to attend the conference. Sincere thanks to Dr. Gerd Infager of Stanford University for accepting the award on Dantzig's behalf, and for his delivery of the lecture entitled, "Recent developments in planning under uncertainty". More on the awards and prizes, including a list of past winners, can be found on our WWW site.

The Solandt Award Acceptance Speech

(The following is a reprint of the acceptance speech given by Mr. Tom Charlton, Vice-President, Mail Operations, on behalf of Canada Post Corporation - ed.)

Thank you for that kind introduction. It is indeed an honour, on behalf of Canada Post Corporation, to accept the 1997 Omond Solandt Award. We're pleased to be recognized as one of the companies in Canada that has played a significant role in using and supporting operational research for over 30 years.

I can speak with some authority about the early days of O.R. in The Post Office Department because I began my career in 1971 in the O.R. department as a fresh Simon Fraser graduate, with a lot less grey hair. That was at the time when the Post Office was embarking on a major program to mechanize its letter sorting operations, and to rebuild its network and major processing plants. It was the first significant change to the physical network in decades and it moved Canada to the forefront of world postal modernization where we have stayed as a leader ever since.

It was a great time to be a keen, young, operational researcher anxious to apply all the fancy mathematical techniques, I'd just learned. What a rude awakening! For the first couple of years, I spent most of my time away from home in post offices large and small across Canada, on the night shift, sampling pieces of mail to determine such exotic characteristics as size, weight, origin and destination. I also suffered the (good natured) verbal slings and arrows of the old postal veterans (my father's age) who had seen them come and seen them go and expected me to follow the same route.

However, by having the unique opportunity to serve this apprenticeship on the firing line, so to speak, (in addition to a wonderful education in Canadian geography), I learned some valuable lessons which still serve me well today:

1. You'd better understand how the system really works before you try to improve it, and

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2. The people in the system had better be committed to the improvement or it won't get to first base.

I can happily report that, by and large, our early O.R. work was successful and Canada ended up with a very well re-designed postal network which stood us in good stead during the period of large volume growth in the 70's and 80's. Although that was a turbulent period in our Company's history - from the labour disruptions of the 70's to the coming of Crown Corporation in '81 - the O.R. group continued to contribute in many areas from econometric modelling to mathematical optimization.

As O.R. as a discipline became part of the curriculum in many other programs - industrial engineering for instance - our Company dispersed its O.R. people throughout the organization, assigned them to various functions and asked them to apply O.R. techniques helping the functional experts to solve operational problems.

Over the years, we also began to buy O.R. from outside consulting groups as well as to enter into developmental arrangements with excellent, specialist companies. G.I.R.O. from Montreal, a former Omond Solandt award winner, is one such example. Together we have successfully pioneered the application of mathematical optimization techniques to one of our major cost areas - delivery operations. This joint work has resulted in world-class software which we use daily to design letter carrier routes.

As well as applying proven O.R. techniques throughout our business, we're also ploughing some new ground in another major area. We've set up multi-disciplinary teams of operating, line people alongside various types of functional specialists including O.R. in several of our processing plants to research and develop innovative ways to conduct our operations.

We're steering somewhat towards the Japanese lean production ideas but trying to come up with our own made in Canada Post solutions since our operation has some characteristics which differ from a traditional manufacturing operation. As I said earlier, the people in the system must believe in the changes and you must have alignment between the various stakeholders in the company. This is probably our biggest challenge as it is with most companies. So far, the results are promising. Our pilot projects have resulted in reduced cycle time for the mail, less floor space, increased productivity, and better employee morale. It may not be exactly like the WWII beginnings of O.R. in Britain but the approach is very similar - bringing people with different backgrounds together to try to find a better way.

I suspect that this may be one of the paths that O.R. may take in the future, sort of back to basics, finding a smarter better way and not necessarily requiring a lot of Capital investment. While there will always be a need for the ongoing development of theory and mathematical techniques, the real payback from O.R. for us happens out in those large and small post offices, on the night shift, when real operations - service and revenues and costs - occur! Canada Post is actively practicing this kind of O.R. and is still deriving good benefits from it. I encourage you as operational researchers to strive for similar results.

It has been a great pleasure to be with you this evening. Thank you sincerely for honouring all of us at Canada Post Corporation with this prestigious award.

The CORS Diploma

Nearly 60 diplomas were awarded to students at the Technical University of Nova Scotia, the University of Windsor, the University of Western Ontario, the Université du Québec à Trois-Rivières, and the University of Ottawa. For more information on the CORS Diploma see your local contact person. The CORS Officer responsible for the Diploma Program is:

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DES NOUVELLES DE QUÉBEC

(Bernard Lamond)

Le site WWW de notre section locale a maintenant une nouvelle page, nommée ORNEWS. Ce babillard électronique sert à l'affichage d'annonces pouvant intéresser les étudiants de R.O., comme les offres d'emplois et de bourses d'études. Jusqu'à maintenant, nous avons publié des notes reçues par courrier électronique ou trouvées sur Usenet. Nous invitons les membres de la SCRO à nous envoyer leurs annonces par courrier électronique. Et SVP, visitez notre site.

NEWS FROM QUEBEC CITY

(Bernard Lamond)

Our local section's Web site has a new page, called ORNEWS. It is a bulletin board for announcements of interest to O.R. students, such as job postings and scholarship announcements. So far, we posted material received by email or found on the Usenet. CORS members are invited to send their announcements to me by email. Please, take a look at our site.

<<http://www.fsa.ulaval.ca/dept/monade/ornews>>

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**A Brief Survey of Operations
Research Models for Warehouse
Design and Operation**

*Gilles Cormier, Ph.D., P.Eng.
Associate Professor of Industrial
Engineering
Université de Moncton*

**Quelques modèles d'aide à la décision
pour l'optimisation des entrepôts**

*Gilles Cormier, Ph.D., ing.
Professeur agrégé de génie industriel
Université de Moncton*

The design and operation of a warehouse entails many challenging problems, and it is the purpose of this paper to provide a brief outline of representative operations research models which can help solve them. Problems which will be addressed can be classified into three major categories: warehouse design models, throughput capacity models, and storage capacity models. The paper concludes by identifying future research opportunities.

Warehouse Design Models

Warehouse design models attempt to optimize such things as the orientation of storage racks, the allocation of space among competing uses, the number of cranes and the overall configuration of the facility. For instance, Bassan, Roll and Rosenblatt (1980) compared two alternative shelf arrangements, considering material handling cost, annual cost per unit of storage area, and annual cost per unit length of external walls. The analysis yields the optimum number of storage spaces along a shelf, number of shelves, location of doors, as well as warehouse dimensions.

Looking at a more global design problem, Park and Webster (1989) compared alternative warehousing systems on the basis of the following factors: control procedure, handling equipment movement, storage assignment rule, input and output patterns for product flow, storage rack structure, and the economics of each storage system.

Also quite common in evaluating warehouse designs is the use of computer simulation, given the complexity and stochastic nature of such systems. An

interesting hybrid method was developed by Rosenblatt, Roll and Zyser (1993), in which output values are passed back and forth between an analytical optimization model and a simulation model until target values of the performance measures are attained.

Throughput Capacity Models

Throughput capacity issues have received the most attention to date in the operations research literature, and this probably makes sense, given that order picking costs are often perceived as dominating other costs. In turn,

policies which influence throughput capacity encompass storage assignment, batching, and picking. The former assign arriving items to available locations in the warehouse, with the objective of minimizing either material handling costs (or equivalently, maximizing throughput) or material handling costs plus inventory costs. For their part, batching

La recherche opérationnelle peut être très utile pour le design et l'exploitation efficace d'entrepôts. Cet exposé présente brièvement quelques problèmes typiques que l'on retrouve dans le domaine, soit au niveau du design, soit dans l'optimisation de la capacité de débit et de la capacité de stockage. Des problèmes de recherche seront finalement proposés.

La modélisation des problèmes de design d'entrepôts

Le design d'entrepôts doit répondre aux questions d'aménagement intérieur et extérieur, à partir du nombre de palettiens jusqu'aux proportions extérieures de l'édifice, en passant par le nombre d'engins de manutention, entre autres. Par exemple, Bassan, Roll et Rosenblatt (1980) ont analysé deux configurations de palettiens, en considérant les coûts de manutention ainsi que les coûts annuels associés aux aires de stockage et aux murs extérieurs. Les résultats du modèle incluent la densité du stockage par palettier, le nombre de palettiens, l'emplacement des portes, ainsi que les dimensions externes de l'édifice.

De leur côté, Park et Webster (1989), prenant une vue plus globale, ont comparé des systèmes d'entreposage par rapport aux procédures de contrôle, au nombre de déplacements des engins de manutention, aux politiques de rangement des produits, aux flux des produits, à la configuration des palettiens, et aux coûts.

Par ailleurs, il n'est pas rare de voir la simulation par ordinateur appliquée à l'étude des systèmes d'entreposage, vu la nature complexe et stochastique de ceux-ci. Une méthode proposée par Rosenblatt, Roll et Zyser (1993) a la caractéristique intéressante d'itérer entre un modèle d'optimisation analytique et un modèle de simulation jusqu'à ce que les mesures de performance visées soient réalisées.

L'optimisation de la capacité de débit

L'importance des coûts du prélèvement des commandes est sans doute la raison principale pour laquelle la recherche opérationnelle est devenue un outil de choix pour l'étude des problèmes de manutention en entrepôts. Les éléments pouvant affecter le débit comprennent les politiques de rangement, les politiques de groupage et les politiques de prélèvement. Les premières voient à l'affectation des produits aux aires de stockage, avec comme objectif la minimisation des coûts de manutention (ou de façon équivalente, la maximisation du débit), ou autrement la minimisation simultanée des coûts de

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News from the Ottawa Section

(submitted by François Julien)

The general assembly of the Ottawa Section was held on May 26 during the National Conference. We elected the following executive:

- President: François Julien
- Secretary/Treasurer: George Haines
- Communications/Publicity: Agathe Martin
- Special Events Coordinator: Robin Harvey

In addition to hosting the 1997 Annual Conference, our Chapter was very active in local events throughout the 1996-97 year. On October 16 1996, we invited professors Ivan Rival and Nejib Zaguia from the Computer Science Department of the University of Ottawa to give a talk on "Order Explorer", a multimedia visualization software environment with numerous applications for decision-making including "Degree Navigator" which, among many other features, allows students to better plan the courses they need and wish to take to meet the requirements of their degree.

On December 6 1996, we invited George Lindsay, a well-known and respected retired member of our Chapter whose contribution to O.R. and to CORS over the years has been invaluable, to be the guest speaker of our Annual Holiday Season Luncheon: he entertained no less than fifteen members and retired members on the topic "Forty Good Years of O.R. in the Canadian Department of National Defence".

Our major event of the year was Ott_OR '97, held on March 14 at the University of Ottawa, which was reported in the last issue of the Bulletin. Despite the worst snow storm of the year, the event was a success, with a dozen presentations made by students, guests from industry, as well as representatives of leading software companies, CACI and COREL who came to give very interesting software demonstrations. More than 20 participated in this event, despite the poor weather.

This year, as much as possible, our goal has been to combine activities with other local organizations/special interest groups/ professional societies with similar interest: this allowed our members to learn about other events of interest that were organized locally, and to make our events available to a wider audience in the hopes that more people would attend. Hence, we tried to coordinate events and/or keep in touch with PRISM (program of Research in Interdisciplinary Systems Management, University of Ottawa), the System Science Programme (University of Ottawa), the Algorithms Laboratory Research Seminar Series (Computer Science Dept., U. of O.), the Luncheon Seminar Series (Faculty of Administration, U of O.), The Technology and Operations Management seminar Series (jointly organized by the Faculty of Administration, U of O, and the School of Business, Carleton U.), and the Ottawa Carleton Manufacturers Network. Our main means of announcing events has been our local Bulletin (OR Bits) which was published and sent to our members four times in 1996-97. More work in this direction is expected for the coming year, including a greater use of e-mail on the Section home page to announce events.

We are planning a number of activities for the 1997-98 year including a seminar on O.R. Opportunities in Health Care, which will be given by Michael Carter some time this Fall: Michael was supposed to come to our Ott_OR'97 on March 14, but could not make it to Ottawa due to the severe snow storm. We will try to make this event early in the Fall so that weather won't be a factor this time! We plan on holding our traditional "Holiday Season Luncheon" again in early December in a local restaurant. The guest speaker is still to be determined. This is a favourite social event, especially popular with our retired members. We also plan on holding Ott_OR '98 at Carleton University in February or March 1998. The format is yet to be decided upon. These and possibly other events will be discussed at length at the first meeting of our executive which should take place some time in late June.

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CORS Competition on the Practice of O.R.

Each year the Canadian Operational Research Society conducts a competition on the Practice of O.R. to recognize the challenging application of the Operational Research 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.

There are two basic purposes behind the Competition, the first being the obvious one of recognizing outstanding O.R. practice. The other is to focus attention on O.R. and its applications by practitioners from Canada by attracting quality papers to the CORS National Conference.

Entries will be expected to report on a completed, practical application, and must describe results that had significant, verifiable and preferably quantifiable impact on the performance of the client organization. The work on the project may have taken place over a period of several years, but at least some of the work must have taken place over the last two years. Previous publication of the work does not disqualify it; however, you may not report on a project which has been previously submitted to the CORS Competition on the Practice of O.R.

To enter the 1998 competition you must:

1. Submit an abstract not exceeding 300 words of a paper on an actual success story of O.R. by **February 20, 1998** to François Julien, Faculty of Administration, University of Ottawa, Ottawa, Ontario, K1N 6N5 TELEPHONE: (613) 562-5800 ext. 4788; FAX: (613) 562-5164 E-MAIL: JULIEN@ADMIN.UOTTAWA.CA
2. Be a resident of Canada.
3. Include a letter by an executive of the client organization that sponsored the application, attesting that this application truly had an impact and that the organization would not object to having a paper presented.
4. Include the phone number of the author(s) and the name(s), title(s) and phone number(s) of at least one executive of the client organization where the O.R. application was put into effect.

Finalists will be selected by February 27 1998. They must submit a more detailed written report by **March 27, 1998** and make an oral presentation of the paper at the CORS/INFORMS Joint Conference in Montréal, **April 26 to 29, 1998.**

The winner(s) will be selected based upon:

1. The project, which should exemplify the challenging application of the operational research approach to the solution of significant applied problems. While statistical and presentational difficulties are characteristics of almost all applications, they will not be considered a substitute for operational research.
2. The quality of the analysis, of the modelling and of the successful implementation of the results at the client organization.
3. The significance of the impact of the results and recommendations on the performance of the client organization.
4. The presentation, both written and oral. A crucial part of the presentation is a "case history" of the project, which describes the project's development from start to finish, and focuses upon the challenges faced by the analysts.

A total of \$1800 in prize may be awarded by the committee: however, the committee reserves the right not to award any prize.

For more information, please contact François Julien.

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Compétition de la SCRO sur la pratique de la R.O.

Chaque année, La Société Canadienne de Recherche Opérationnelle organise un concours sur la pratique de la recherche opérationnelle au Canada visant à reconnaître l'excellente application de la méthode de la recherche opérationnelle à la résolution de problèmes pratiques. Les critères considérés lors de l'évaluation des soumissions sont l'impact du projet au sein de l'organisation-cliente, la contribution à la pratique de la recherche opérationnelle, la qualité de l'analyse, le niveau de difficulté du problème et la qualité des présentations écrites et orales du projet.

Ce concours a deux objectifs. L'un est de donner aux meilleures applications de la recherche opérationnelle le crédit qu'elles méritent. Le second est d'augmenter la visibilité de la recherche opérationnelle au Canada en encourageant la présentation de communications de qualité à la conférence annuelle de la SCRO.

On s'attend à ce que les soumissions rapportent les résultats d'une étude pratique complétée et qu'elles décrivent des résultats ayant eu un impact important, vérifiable et préférablement quantifiable sur la performance de l'organisation-cliente. Les travaux peuvent s'être déroulés sur plusieurs années, mais une partie doit avoir été exécutée lors des 2 dernières années. Les travaux déjà publiés sont admissibles: cependant, on ne peut décrire un projet qui fut déjà présenté lors d'une compétition sur la pratique de la SCRO précédente.

Les conditions de participation sont les suivantes.

1. Soumettre un résumé d'au plus 300 mots décrivant une application pratique de la recherche opérationnelle avant le **20 février 1998** à François Julien, Faculté d'administration, Université d'Ottawa, Ottawa, Ontario, K1N 6N5, TÉLÉPHONE: (613) 564-5800 poste 4788; FAX: (613) 562-5164, E-MAIL: JULIEN@ADMIN.UOTTAWA.CA
2. Être un résident du Canada.
3. Joindre à l'envoi de l'article une lettre d'un dirigeant de l'entreprise cliente qui a rendu l'application possible, attestant de l'importance de l'application pour son entreprise et consentant à la communication des résultats.
4. Indiquer le numéro de téléphone de ou des auteurs ainsi que les noms, fonction et numéro de téléphone d'au moins un dirigeant de l'entreprise cliente qui a utilisé l'application.

Les finalistes seront choisis au plus tard le 27 février 1998. Ils devront soumettre un rapport écrit plus détaillé sur l'application avant le **27 mars 1998** et ils feront une présentation orale lors de la conférence conjointe SCRO/INFORMS tenue à Montréal **du 26 au 29 mai 1998.**

Les gagnants seront choisis en fonction:

1. du projet, qui devra illustrer l'application créative de la recherche opérationnelle à la solution de problèmes appliqués importants. Alors qu'on retrouve des difficultés d'analyse statistique et de présentation dans presque toutes les applications, on ne pourra les substituer à des difficultés d'analyse par la recherche opérationnelle.
2. de la qualité de l'analyse, de la modélisation et de la mise en oeuvre des résultats au sein de l'organisation-cliente.
3. de l'importance de l'impact des résultats et des recommandations sur la performance de l'organisation-cliente.
4. des présentations écrite et orale, dont une partie centrale est un "historique" décrivant le développement du projet de son début à sa fin, mettant en relief les défis posés aux analystes.
5. la compétition est dotée d'une bourse totale de 1800\$. Cependant, le comité se réserve le droit de ne pas donner de prix.

Pour plus de renseignements, veuillez contacter François Julien.

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MEETINGS AND CONFERENCES

CORS / SCRO Business Meetings

- 96 Sept 26 2nd Council Meeting, Montréal.
 96 Nov 28 Executive Meeting, Toronto.
 98 Jan 30 3rd Council Meeting, Ottawa.
 98 Mar 27 4th Council Meeting, Montréal.
 98 Apr 26 - 29 5th Council Meeting, Annual General Meeting, 1st Meeting of 97/98 Council,
 at the 40th Congrès Annuel SCRO - CORS Annual Conference, Montréal.

CORS / SCRO Annual Conferences

- 98 Apr 26-29 40th Congrès Annuel SCRO - CORS Annual Conference, Montréal,
 Québec. General Chair: Paul H. Mireault. See the footer.
 99 Jun 7-9 41st Congrès Annuel SCRO - CORS Annual Conference, Cleary
 International Centre, Windsor, Ont. General Chair: Richard Caron, email:
 rcaron@uwindsor.ca.
 2000 Spring 42nd Congrès Annuel SCRO - CORS Annual Conference, Alberta. General
 Chair: Erhan Erkut, email: erhan.erkut@ualberta.ca.

Other Conferences

- 97 Aug 20 - 22 PATAT'97, The 2nd international Conference on the Practice And Theory of
 Automated Timetabling, University of Toronto, Canada. Co-chairs: Dr
 E.K.Burke, e-mail: ekb@cs.nott.ac.uk and Dr. Michael Carter, Phone: (416)
 978-8661, FAX: (416) 978-3453, e-mail: carter@mie.utoronto.ca,
 <<http://tawny.cs.nott.ac.uk/ASAP/ttg/patat.html>>.
 97 Aug 24-29 International Symposium on Mathematical Programming, Lausanne,
 Switzerland, <<http://dmawww.epfl.ch/~ismp97/>>.
 97 Sept 3 - 5 SOR 97: SYMPOSIUM ON OPERATIONS RESEARCH 1997, Annual
 Conference of the Deutsche Gesellschaft für Operations Research (DGOR)
 and the Gesellschaft für Mathematik, Ökonomie und Operations Rsearch
 (GMÖOR), Friedrich-Schiller-University Jena, Germany, email:
 sor97@wiwi.uni-jena.de, <<http://www.wiwi.uni-jena.de/sor97.html>>
 97 Sept 22-23 Telecommunications in the 21st Century: A Challenge for Operations
 Research, 5th Autumn Tutorial of the Swiss Operational Research Society.
 Contacts: Prof. Dr. Heinz Gröflin, Phone: +41 26 300 83 33, Fax: +41 26 300
 97 26, email: heinz.groeflin@unifr.ch: Dr. Heinz Schiltknecht, Phone: +41
 61 821 75 25, Fax:+41 61 821 75 45, email: hschildt@dial.eunet.ch
 97 Oct 20-24 IEPM'97 - INTERN'L CONF. ON IND. ENG. AND PROD. MAN., Lyon,
 France. Diana RAULIER, I BELGIUM, Tel. (+32)65 32 32 17 - Fax (+32)65
 31 56 91, email: raulier@message.fucam.ac.be
 97 Oct 26-29 INFORMS Dallas, Hyatt Regency. General Chair: Paul A. Jensen.

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- 97 Nov 25-28 ICORMS-ICORD 1997 Metro Manila, Philippines. Co-Chairs: Elvira A. Zamora (elvira@mnl.sequel.net), Aura C. Matias (matias@engg.upd.edu.ph), Mary Ann V. Capistrano (avistro@pusit.admu.edu.ph).
- 97 Nov 30-Dec 4 APORS '97, The Fourth Conference of the Association of Asian-Pacific Operational Research Societies, within IFORS, Melbourne, Australia. Co-Chairs: Santosh Kumar & Moshe Sneidovich apors97@sci.monash.edu.au; <<http://www.maths.mu.oz.au/~worms/apors/apors.html>>.
- 98 Jan 8-10 International Conference on Stochastic Processes and their Applications, Anna University (Guindy Campus), Madras, India, M. L. Chaudhry, fax: 613-541-6584, e-mail: Chaudhry@mail.rmc.ca.
- 98 Mar APMOD 98, Applied Mathematical Programming and Modeling, Cyprus,
- 98 May 19-22 Symposium on Industrial Engineering and Management: Canadian Society for Mechanical Engineering (CSME) Forum, Ryerson Polytechnic University, Toronto, Ontario, Canada. J. A. Buzacott, Tel: (416) 736-2100, ext. 77939, email: jbzacot@bus.yorku.ca; and . Liping Fang and Dr. Y. June Wu, Tel: (416) 979-5303, Fax: (416) 979-5265, E-mail: lfang@acs.ryerson.ca and jwu@acs.ryerson.ca.
WWW: <<http://www.ryerson.ca/mech-eng/csme.forum.98>>.
- 98 May 31,
Jun 1-3 3rd International Conference on Multi-Objective and Goal Programming, Québec City, Canada. Contact Jean-Marc Martel, Fax: 1-418-656-2624, email: mopgp98@fsa.ulaval.ca.
- 98 Jun 28-Jul 1 INFORMS Tel Aviv, Hilton/Tel Aviv University. General Chair: Jacob Hornik.
- 98 Jul 12 - 15 EURO XVI, Brussels, Belgium. Deadline for abstract submission is Dec. 15, 1997. Contact Jaques Teghem, Fax: +32-65-374689, email: euro@mathro.fpms.ac.be, <<http://image.fpms.ac.be/euro16.html>>
- 98 Aug 9-12 2nd International Conference on Engineering Design and Automation, Aston Wailea Resort, Maui, Hawaii. Contact: Hamid R. Parsaei, Tel: 502-852-1416, Fax: 502-228-6868, email: hrpars01@ulkyvm.louisville.edu.
- 99 August 16-20 IFORS '99, Friendship Hotel, Beijing, China. Contact Professor Kan Cheng: Fax +86 10 254 1689, email cheng@amath3.amt.ac.cn

The Third MOPGP Conference

(Submitted by Jean-Marc Martel)

The Third International Conference on Multi-Objective Programming and Goal Programming: Theory and Applications, will be held in Québec City, Canada, on May 31 and June 1-3, 1998. A broad range of topics will be covered during the conference. Papers related to the methodology and application of multi-objective programming and goal programming are suitable for submission to the conference. The deadline is December 31, 1997. Please contact the Program Chair Jean-Marc Martel, Faculté des Sciences de l'administration, Université Laval, Sainte-Foy, Québec, Canada, G1K 7P4. Fax: 1-418-656-2624, e-mail: mopgp98@fsa.ulaval.ca.

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WWW Conference Listings

CORS/SCRO Conference Page

<http://www.cs.uwindsor.ca/cors/meetings/confer.htm>

INFORMS Conference Home Page

<http://www.informs.org/Conf/Conf.html>

IFORS Conferences

<http://www.ifors.org/leaflet/conferences.html>

Netlib Conferences Database

<http://www.netlib.org/confdb/Conferences.html>

SIAM Conference Home Page

<http://www.siam.org/conf.htm>

Harvey Greenberg's list of Conferences

<http://www-math.cudenver.edu/~hgreenbe/otherweb.html>

Michael Trick's list of Operations Research Conferences and Journals

<http://mat.gsia.cmu.edu/confer.html>

The 1998 Rolex Awards for Enterprise

The Society has received pamphlets, including an official application form, describing the 1998 Rolex Awards for Enterprise. Les Prix Rolex à l'esprit d'entreprise ont pour objet d'encourager l'esprit d'entreprise dans le monde entier, en soutenant des initiatives personnelles hors du commun dans certains domaines d'activité. The areas of activity include science and medicine, technology and innovation, exploration and discovery, the environment, and cultural heritage. The jury will choose five Laureates, each of whom will receive \$50 000, a gold Rolex chronometer, and a commemorative diploma. En outre, le Jury désigne jusqu'à dix Lauréats associés reçoit un cheque de 10 000 dollars, un chronomètre Rolex en acier et or spécialement gravé à son intention et un diplôme commémoratif. The deadline for North American candidates is August 31, 1997. Official application forms are available from the CORS President, Roger Roy, or by faxing a request to (416) 968-2315.

News from Toronto

The new president of the Toronto Student Section is Allison Hewlitt, University of Toronto. She replaces John Blake who is taking a faculty position at TUNS, Halifax, and who is also serving as CORS Treasurer. Both the Student Section and the Toronto Section thank John for his efforts in the past and wish him the best of luck in the future.

On Wednesday, September 3, 1997, **Dr. William Pierskalla**, Dean of The Anderson Graduate School of Management at UCLA, will present "Strategic Planning and Operations Management of Health Care Delivery Systems. The talk, which is supported by the **Traveling Speaker's Program**, is at 12:30 p.m. following an 11:45 a.m. lunch. For more details, including the venue, contact Mike Carter (carter@ie.utoronto.ca, 416-978-8661).

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The Next Issue

The next issue of the Bulletin will appear in late-October. It will feature an invited article on Mining by Eldon Gunn. Your contributions to the Bulletin, especially news on the activities of local sections, and of members, are welcome and appreciated. (The preferred method of submission is by a WORD or WP attachment to an e-mail.) Please submit all contributions to:

Richard J. Caron, CORS Bulletin Editor
 Dept. of Economics, Mathematics & Statistics
 University of Windsor
 401 Sunset Avenue
 Windsor, Ontario N9B 3P4

email: rcaron@uwindsor.ca
 fax: 519-971-3649

The deadline is September 30, 1997.

<p>CORS Bulletin Advertising Policy</p> <p>Ads cost \$120 per page, proportional for fractional pages. Logos and prepared layouts can be accommodated. Direct inquiries to the Editor.</p>	<p>Politique de publicité du bulletin de la SCRO</p> <p>Le coût d'une annonce est de 120\$/page et varie en proportion pour les annonces de moindre longueur. Les annonces peuvent contenir des logos et des schémas. Contacter le rédacteur pour toute autre information.</p>
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