



CORS TIMES

L A R G E S T C I R C U L A T I O N I N T H I S B U I L D I N G

INTERVIEW WITH A DISTINGUISHED OR PRACTITIONER



Dr. Mike Carter

Michael Carter is the director of the Centre for Research in Healthcare Engineering at the Department of Mechanical and Industrial Engineering at the U. of Toronto. He additionally holds positions as Adjunct Professor at the School of Management, U. of Ottawa and Adjunct Scientist at the Institute of Clinical Evaluative Sciences. Mike won the CORS Practice Prize three times, in 1988, 1992 and 1994 and was the winner of the CORS Award of Merit in 2000.

He will be presenting the first plenary session of this year's conference, New Challenges for Operations Research Applications in Health Care. | by Deborah Loach

How has healthcare OR evolved?

In the 1970's, virtually every hospital in the country had industrial engineers; the big ones had IE departments (although health called them "Management Engineers"). By the mid to late 1980's they were gone ... an easy target for cost cutting exercises to put more dollars into clinical care. One of my PhD students, Sonia Vanderby, suggested that their demise was partially caused because they were not working on the problems that keep the CEO awake at night. They were working on inventory, portering and nurse scheduling. Now everyone is keen to fund health care. My phone is ringing regularly and I'm receiving tons of emails. Within every hospital, there are a few people who really get what OR can offer. My research group of fifteen grad students and four full time staff is currently involved in thirty different application projects in the healthcare industry.

Could you give some notable examples of your projects in this area?

One of my recent favourites involved the Ontario Wait List Initiative. In 2006, the Ministry of Health and Long Term Care wanted to know how many additional surgeries they should fund in 2006-07 to reduce wait lists for hip and knee replacement and cataract surgery such that 90% of patients were treated with 26 weeks. The problem was complicated by a lack of wait list information or arrival rates. Using doctor's billing records, we managed to recreate the wait list, and produce a forecast that was "spot on" according to the Ministry.

What makes the application of OR practices to healthcare different from their application in other areas?

I tell people that healthcare is 20 years behind manufacturing and 15 years behind most other service industries. Many of the applications in healthcare have direct parallels in other industries, and we can often apply those solutions directly. The main problem with healthcare is the culture and the organization; no one is really "in charge". Change is difficult. The good news is that things are generally so bad that we can usually find a solution that makes everyone happy. Having said that, there are also a wide variety of OR applications in healthcare that are unique, such as disease modeling, radiation therapy planning, surgical scheduling and emergency service location problems.

Do you have any advice for aspiring OR practitioners in this field?

For recent OR grads looking for a career in healthcare, I would advise ... patience. You are not going to find many ads in the newspaper looking for OR analysts. You will see jobs in "health informatics" or decision support, or even project management that do offer opportunities to apply OR techniques. I believe that there have been at least 50 industrial engineering grads who have found jobs in the healthcare sector just in the past five years. I expect this to grow, and I suspect that one finds a similar picture across the country. For OR academics, I suggest that you seek out those people in the system who are really keen to drive improvement and change. I assure you they are there. You need to collaborate with clinical practitioners and researchers.

What new and interesting initiatives are you currently undertaking and where do you hope to go in the future?

This is a very exciting time for OR/MS/IE in healthcare. The medical community has discovered our tools and techniques. Ministers of Health use words like "queuing theory" and simulation modeling. At the University of Toronto, we recently launched the Centre for Research in Healthcare Engineering (CRHE – www.mie.utoronto.ca/crhe) . UBC has the Centre for Health Care Management. A dozen universities across the country have small groups of dedicated OR in healthcare research. At this conference, a group of us have begun discussions about creating a National Centre of Excellence in Healthcare. There is an international conference on OR in healthcare being held in Toronto on July 28 – August 1, 2008 (www.orahs2008.com).

As a longstanding member of CORS, what are your key milestones/memorable events from past conferences you've attended?

I attended my first CORS meeting in Montebello, Quebec in 1979. Since then, I haven't missed very many. Certainly, highlights for me include winning the Practice Prize three times, and helping to organize a couple of the conferences in Toronto. However, I think that the main reason I keep coming back is because of the people I have met and the friendships that have developed. CORS has been an important part of my career and my life. ★



CORS TIMES WELCOMES YOU TO CORS/OPTIMIZATION DAYS 2008

Newspaper ready Just-In-Time. | by Ali Vahit Esensoy

Welcome to the 50th annual conference of CORS, coinciding with the 400th anniversary of historic Quebec City. The CORS Times news team is ready to document this important milestone event for our society and to provide some context to the anniversary celebrations with pieces on CORS history and researchers.

My co-editor Daphne Snickers and I came up with the idea of a daily newspaper during the last conference as a fun opportunity for us, the junior CORS members, to engage the Canadian OR community and to find out more about the interesting directions OR/MS/IE research is heading towards. That, and also to put the fear of press in our supervisors with cameras, note pads and camouflage gear.

Please feel free to approach us with comments and ideas on CORS Times. We hope that you have a wonderful stay in Quebec City and an enjoyable 50th anniversary conference. ★

SPOTLIGHT ON AN UP-AND-COMING RESEARCHER

Dr. Jonathan Patrick

Jonathan Patrick has started as an Assistant Professor at the Telfer School of Management at the U. of Ottawa less than a year ago. | by Sonia Vanderby



Can you tell us a bit about your current research?

I am currently researching the application of approximate dynamic programming to large scale decision problems in health care management. Specifically, I am looking to determine intelligent patient scheduling policies to improve the success of meeting wait time targets as well as developing models that will aid in capacity planning decisions and patient flow within a hospital.

What are some of the advantages of doing a Post Doc?

I did a unique post doc in that it was half funded by a local health authority in BC. That meant I spent most of my time in the health authority rather than at the university. This was hugely beneficial for me as it gave me some significant insight into the inner workings of the health care system within Canada. It was admittedly frustrating at times as it was the first attempt at such a position and there were understandable growing pains. That said, I do recommend such a post-doc as it helps focus the research more towards actual practice.

Obviously it is nice to avoid the post-doc stage if you can. I did feel a little as if I was spinning my wheels. But then as I look back on it I realize that it was more useful than I had thought it was.

How was the transition from being a post doc to faculty?

The big transition is simply that you are no longer supervised. Suddenly it is entirely up to you to insure that your research moves forward. That requires a shift in thinking.

What were some of the challenges?

Working in health care applications, it is paramount for my research that I be connected with the local hospitals. Moving to a new city meant that new contacts had to be made and that has been a slow process. Also, juggling teaching, research and family is challenging at times as you often feel that you have to give in one area in order to do your best in another. It is tough sometimes to remember where your priorities should lie.

Did anything about being faculty surprise you?

Even though I knew it to some extent already, the independence of a professor still takes some getting used to. In one sense, it is great. There is so much freedom to pursue interesting ideas. In another sense, it is daunting as you know your career depends on you making intelligent choices about what to research!

Do you have any suggestions or insights for other aspiring Profs?

Don't be afraid to seek advice. Keep in touch with your former supervisor if you got along well. Foster relationships with the older professors and the administrative staff at your new place of work. There will be many questions that you don't have the answers to so save yourself some painful months by not being too shy or proud to seek help. Also, don't over commit yourself too quickly. Better to get a slow start down a fruitful path than to get a fast start down numerous dead ends. Cultivate the ability to respectfully say 'no'.

Any final thoughts you would like to share with CORS members?

Research is something that can easily consume one's life and time, especially when it is going well. However, most of us have two other major responsibilities: teaching and family. We have a responsibility to not neglect them simply because our research is flourishing. On the flip side, it is easy to ignore or procrastinate on research when it is not going well and here too we have a responsibility if we are to fulfill our mandate. To give students the time and energy they deserve, to spend the hours required to allow our research to advance and still remain a good husband and father is no easy balancing act. That being said, the life of a professor has been pretty good so far! Sure, life would be less hectic if I didn't have kids or told students to get lost but it would also be a lot less fun and a lot less rewarding! ★

Where to eat? | by Pam Chan

Maple Syrup Sugar Shack: Located a mere 15minutes away from Old Quebec City, this place offers the traditional maple sugar shack. There is an all you can eat menu with Quebecoise food for \$22.60. A student menu is also available for a cheaper price. | *Addr: 237 ch. du Lac, C.P. 112 Neighbourhood: Saint-Augustin-de-Desmaures (15 minutes away from Quebec City)* ☎: 418-878-5085 | \$\$

Creperie le Petit Chateau: Located near le Chateau Frontenac, there is a wonderful creperie that wraps 58 varieties of food from mains to desserts into their crepes. | *Addr: 5, rue St-Louis, Neighbourhood: Vieux-Quebec, ☎: 418-694-1616* | \$

La Grolla: Varieties of fondue range from beef, bourguignonnes, bacchus, Suisse, to chocolate and maple syrup. Split the fondue with a few good friends and enjoy Switzerland gastronomy. | *Addr: 815 Cote d'Abraham, Neighbourhood: Vieux- Quebec, ☎: 418-529-8107* | \$

Chez Ashton: Chez Ashton was started by Ashton Leblond, a Quebecoise, that developed a zest for fried foods. More notable, it makes its own poutine sauce, not from the can. | *Addr: 640, Grande Allée East. Neighbourhood: Vieux-Quebec, ☎: 418-522-3449* | \$

CORS TIMELINE

by Melissa Kennedy & Daphne Snickers

| | | |
|---|-----------|---|
| | 48 | First courses in OR at MIT |
| | 50 | The first OR journal: Operational Research Quarterly |
| | 52 | First degree program (MA and Ph.D.) formed at CIT, Cleveland, Ohio |
| CORS is formed | 58 | |
| First Annual Meeting and Conference in Toronto | 59 | IFORS formed |
| | 61 | Little's Law by J. Little |
| The first Bulletin is published as a quarterly. The Journal is launched by K.J. Radford with over 500 subscriptions | 62 | |
| The Origin & Growth Of CORS by P.J. Sandiford published in CORS Journal | 63 | |
| Dr. Solandt is the founding chairman of the Science Council of Council | 66 | |
| | 67 | Toronto Maple Leafs win the Stanley Cup |
| | 70 | SCITEC founded to promote more effective communication between scientists and the public |
| | 71 | Intel introduces the microprocessor |
| CORS became a member society of SCITEC | 72 | |
| | 74 | OR/MS Today established |
| | 75 | First von Neumann Prize (ORSA) to George B. Dantzig |
| | 76 | Quality control, G. Taguchi |
| S. R. Atluru of Canada Packers is awarded the first Omond Solandt award | 78 | Data envelopment analysis (DEA), A. Charnes, W. Cooper, E. Rhodes Lagrangian relaxation, A. Geoffrion |
| | 79 | The Quebec Nordiques play their first season in the NHL |
| | 81 | IBM introduces its 1 st PC |
| | 82 | A permanent artificial heart is implanted in a human for first time |
| 25th Anniversary dinner in Toronto The first Merit Award is awarded to Omond Solandt | 83 | |



CORS TIMES

N O W B I L I N G U A L



A FEW MOMENTS WITH MERIT AWARD RECIPIENT ALAIN MARTEL



Alain Martel is a professor of supply chain engineering and management in the Operations and Decision Systems Department at the Faculté des Sciences de l'administration, Université Laval. He was one of the first co-directors of CIRRELT, an Interuniversity Research Centre on Enterprise Networks, Logistics, and Transportation. Dr. Martel received his PhD in Engineering Production from the University of Birmingham in England. He was the president of CORS in 1988 and will receive the prestigious Award of Merit today. His current research interests focus on supply, distribution, and information systems strategy and design. | by Deborah Loach

When did you first become interested in Industrial Engineering/OR?

A long time ago, about 40 years past. I received my Bachelors degree in Engineering and Management from the Royal Military College of Canada. Afterwards, I had planned to become a pilot in the military, but unfortunately my eye sight was not good enough. Thus, I decided to pursue my Masters and PhD in England, since they offered me a scholarship. In England, the PhD program was structured differently, consisting only of a thesis.

Why did you decide to focus on supply chain research?

While in the Canadian Armed Forces, I completed maintenance and logistics projects, many of which were related to supply chain management. As I began to do consulting in industry, I found that many problems were related to this

Could you briefly describe some interesting/notable problems you've solved in this area?

I started in the inventory management side, where my research dealt with finding methods to take into account stochastic aspects of problems, i.e.: lot sizing in multi-echelon systems under stochastic demand. As my career progressed, I shifted to more strategic and theoretical aspects, such as designing supply chain networks. As technology has advanced, I've been able to consider wider systems.

How did CIRRELT arise and how did your position as Codirector change your research opportunities?

CIRRELT allowed for integration of research between five universities. It provided a common location for us to work together. It has become one of the largest such research facilities, with 55 researchers and 300 graduate students.

Are there any new research areas you hope to explore in the future?

I'm getting ready to retire at this point, but would like to write a book to integrate the results of my research before I do so.

Do you have any advice for new researchers in OR?

Don't be too narrow in what you do, keep your options open. Don't simply add a new algorithm for solving an existing problem, but structure your problems and attack new ground.

What are your most memorable events from your presidency of CORS?

How would you describe it?

It was a long time ago that I was president. I remember it was a lot of work and involved traveling. CORS is completely managed by voluntary people. These people tend to move up in the organization over time, which makes transitions go smoothly. Based on my involvement, I would describe the organization as a bunch of interesting people working seriously to improve the status of OR in Canada.

Is there anything else you would like to add?

At this point, there are many 'old guys' retiring from this field. It is important that CORS support initiatives to help students who want to work in OR so that the positions we leave behind are filled.



WHAT TO DO AND WHERE TO EAT?

by Pam Chan

La Rue to Tresor

Historically, colonists would have to pass this street en route to paying their taxes at the Royal Treasury. It began in the 1960s when the new artists Pierre Lussier and Harry Merlou displayed their artwork on this street. Like the ripple effect, many undiscovered artists gathered here to display their artwork the general public. Over time, the A.A.R.T. (Association des Artistes de la Rue du Tresor) was established to ensure the quality and high standards of artwork would be met for emerging artists. This place is a wonderful opportunity to admire and purchase paintings and drawings by artists.

Gold in the Americas

To commemorate Quebec's anniversary, a special exhibit in the Museum of Civilization in Quebec City will feature Gold in Americas. This exhibit will feature a variety of rare gold collections before Columbus, through the gold rush to present day. There are over 450 artifacts borrowed from various parts of the world. The exhibit opened April 30, 2008 and will remain open until January 9, 2008.

85 Dalhousie Road, Neighbourhood: Vieux-Quebec, ☎: 418-643-2158

Place Royale

This is the site where Samuel de Champlain docked in 1608 when the French colonized in this area. It is now a public square and a picture worthy scene. In order to commemorate Samuel de Champlain, a statue was erected in this area. Located in Vieux-Quebec.

Pub Saint-Alexandre

English pub, but offers French flairs such as a mouth-watering blue-cheese, apple and caramelized nuts salad. Their bragging rights include their huge selection of over 250 varieties of beer. A relaxing atmosphere to chill with friends and experience a delectable meal.

1087, rue Saint-Jean, Neighbourhood: Vieux-Quebec, ☎: 418 694-0015 | \$

Café de Paris

Come stop by for a coffee break or for a quick bite. Café de Paris offers bistro food with French flair.

66 St-Louis, Neighborhoo: Vieux-Quebec, ☎: 418-694-9626 | \$

Le Patriarche

Located in an 1827 heritage house in Old Quebec, This place is rated as a four diamond restaurant. It offers a wide selection of foods from game meats to foie gras. In addition, there is a special five course menu that includes foie gras from appetizer to dessert. (\$89)

17 rue St-Stanislas, Neighbourhood: Vieux-Quebec, ☎: 418 692-5488 | \$\$\$\$ ★

Mark your calendars!

By now you probably have heard a hundred times that next year's CORS is going to be a fabulous joint conference with Inform's International and will be held in Toronto from June 14 to 17, 2009. Just as in case you haven't already been "conferenced out" this year, here are some more to think of (at least as vacation spots!). | by Somayeh Sadat

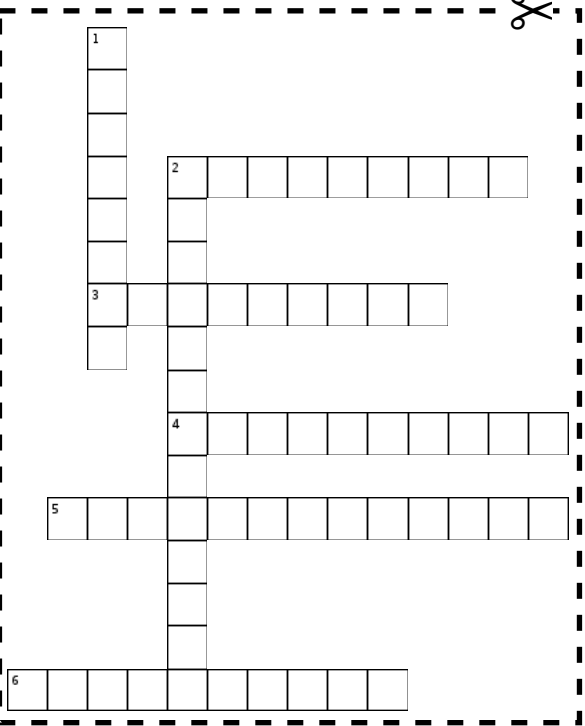
June 5-7: The 2008 Manufacturing & Service Operations Management (MSOM) Conference is held at the University of Maryland, College Park, MD , Check the details at: <http://www.smith.umd.edu/dit/msom2008/index.html>

June 12-14: If you are looking for an excuse to head to the west coast this summer, don't miss the INFORMS Marketing Science Conference in Vancouver: <http://www.marketscience2008.sauder.ubc.ca/>

July13-18: And here is one in the southern hemisphere: 18th Triennial Conference of the International Federation of Operational Research Societies 2008 will be held in Sandton, South Africa: <http://www.ifors2008.org>

July 28th - August 1: And if you thought you just knew about it all, here is one that you might not know: The ORAHS (EURO Working Group on Operational Research Applied to Health Services) conference is held in Toronto this year! If you think it's weird the conference is held out of Europe, guess where it was held in 2002? Brazil! The conference is preceded with a PhD workshop, July 24-25. The deadline for abstracts is June 27, 2008. Check out the <http://www.orahs2008.com>

October 12-15: The next INFORMS Annual Meeting will be held in Washington, DC. Don't miss the deadline for abstract submission: May 15, 2008. Check out the conference website at <http://meetings.informs.org/DC08/> ★



CORSword

Fill out the crossword and bring it to Daphne or Ali, and you can win one of 3 gift certificates to Indigo/Chapters. | by Ali Vahit Esensoy

Across Clues

2. Famous actor from Quebec City won Golden Globe for Pocketful of Miracles
3. Won the first Solandt Prize in 1979
4. First author of the most cited article published in INFOR
5. Won the first Merit Prize in 1981
6. Developed the Tabu Search algorithm

Down Clues

1. City that hosted the most number of CORS conferences (12)
2. Developed the Simplex method

What's On at CORS Today | by Daphne Sniekers

| Plenaries | Tutorials |
|---|---|
| <ul style="list-style-type: none">9:00 AM - Optimization and the Internet, Thomas L. Magnanti, Massachusetts Institute of Technology1:30 PM - Towards a Generic Branch-and-Price Solver: Progress Report, François Vanderbeck , Université de Bordeaux | <ul style="list-style-type: none">10:20 AM - Applications of OR at DRDC Applications of OR in the Department of National Defence, Jocelyn Tremblay, Room 33072:40 PM - OR in the Forest Industry Use of Operations Research to Manage the Forest industry, Mikael Rönnqvist, Room 2317 |
| Other Special Sessions | Social Events |
| <ul style="list-style-type: none">10:20 AM - NSERC News with Ginette Drouin and Serge Villemure, Room 0610 | <ul style="list-style-type: none">12:00 PM - CORS General Assembly, le Cercle at the Alphonse-Desjardins pavilion Restaurant. (Lunch Included)7:00 PM - CORS Banquet and awardsRestaurant Le Parlementaire 1045, rue des Parlementaires |

CORS TIMELINE

by Melissa Kennedy & Daphne Sniekers

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| 1st CORS Competition on the Practice of OR is awarded to Iain R. Grunwell. 1st Merit Award is awarded to Omond Solandt. | 83 | |
| | 84 | Neural networks and Interior point methods. |
| CORS Service Awards are introduced. | 85 | Airline crew and aircraft scheduling. |
| 1st Lander Prize is awarded to Eugene Woolsey. | 86 | |
| Annual meeting was held in Calgary by its new chapter. 1st Student Paper Competition is awarded to Mike MacDonald. | 87 | |
| The Bulletin begins to publish monthly. | 88 | General Algebraic Modeling System/ GAMS, A. Meeraus. |
| | 89 | Tabu search, F. Glover. |
| | 90 | Supply chain management |
| | 92 | A text-based Web browser is made available to the public |
| | 95 | ORSA and TMS merge to create INFORMS. The Nordiques were sold and moved to Colorado. |
| | 96 | e-Commerce |
| The first CORS Diplomas were awarded. | 98 | |
| | 01 | Quebec City hosted the Summit of the Americas. |
| 50th anniversary of the founding of ORSA. | 02 | |
| | 05 | George B. Dantzig (1914-2005) |
| CORS celebrates 50 years. | 08 | Quebec City celebrates 400 years since Bastille. |