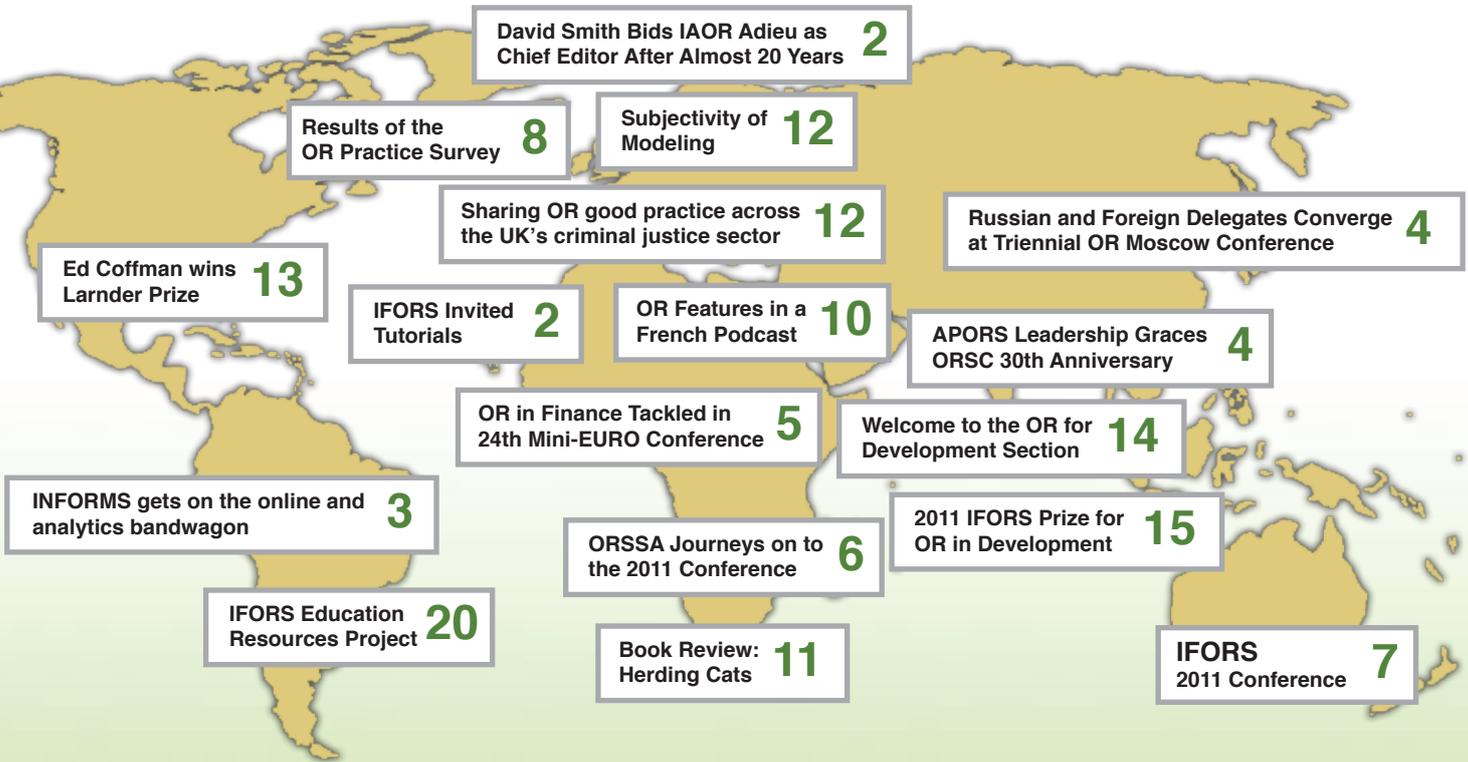




INSIDE THIS ISSUE



Reproduction of materials printed here is welcome. We would just like to request that the source, IFORS News, be acknowledged.

A grateful goodbye, a warm welcome plus everything in between and down under

This issue bids adieu to David Smith who leaves the IAOR Editorship, much richer in the 20 years he had been at its helm. It also welcomes a new section, OR for Development, and its editor, Arabinda Tripathy.

What's in between? Courtesy of our IFORS News correspondents, events from around the world - Canada, Africa, Moscow, Turkey and China were adequately covered. Our VP for NORAM lets us know where INFORMS is headed while I hope that you will find features in this issue from cats to criminals, from philosophers to podcasts, from the subjectivity of modelling to the difficulty on agreeing on a definition of OR, interesting reading, if not thought provoking.

You are also cordially invited to learn more and participate in three new IFORS initiatives, namely, the IFORS Invited Tutorial, the web-based Educational Resources project, and the IFORS- EURO Scholarship for the upcoming ESI 2012.

And down under is IFORS 2011 – which is only about three months away! There's every reason to be excited and if you have not made plans, think again. The IFORS conference visits Australia for the first time and a great scientific program has been prepared for us by Janny Leung. Our host, the Australian Society for Operations Research, through Patrick Tobin, is extending to us a warm invitation by way of an article in this issue.

A traditional highlight of IFORS 2011 is IFORS Prize for OR in Development. As one of its judges, I could tell you that it was difficult to choose, from all the submissions, the magic 8 who get to present their papers as competition finalists. As you read the abstracts of these papers in this issue, you will realize how OR can and has impacted the lives of those in a less developed environment.

The IFORS community deserves a hearty appreciation for its participation in an activity that seeks to develop OR practice. Through its responses to the IFORS Survey of OR practice, some meaningful insights will be presented in the conference. An overview of the topics to be tackled in the session is given here. Note that an open discussion is planned, and therefore there is still time to give your views in lieu of your participation in the survey!

As an OR professional, you will find in this issue perspectives and activities that show how interlinked the global OR community is. Remember, you are not alone in your part of the world; you are a citizen of IFORS! 🌍

- Elise del Rosario, elise.del.rosario@stepforward.ph



From the Editor

IFORS Invited Tutorials

Dominique de Werra, dewerra.ima@epfl.ch



Dominique de Werra

The IFORS Administrative Committee has recently decided to intensify the efforts of the Federation in promoting the quality of education in OR and several actions are presently underway.

Similar to the IFORS Distinguished Lectures that were introduced a few years ago, the Administrative Committee decided to initiate the IFORS Invited Tutorials (IIT) that are to be presented in plenary (or semi-plenary) sessions of the regional meetings of ALIO, APORS, EURO and NORAM.

These tutorials, given by outstanding scholars, will present the fundamentals of emerging OR technologies, application areas or teaching approaches to a large diverse audience. The tutorials are geared toward non-specialists with the goal of inspiring and raising interest in pursuing these new ideas.

Regardless of the type of lecture (application-oriented, algorithmic or theoretical), the speaker should be chosen not only based on his or her knowledge of the sub-field, but also based on the person's presentation abilities. The goal is to provide exciting and informative lectures that most attendees will want to attend.

We therefore ask that the organizing committee of for the next ALIO, APORS, EURO and NORAM regional meetings consider this new opportunity to augment the meeting with a funded plenary speaker. To participate, the organizing committee need only submit the proposed candidate's resume coupled along with a short justification of the topic of the talk. We hope to see many such talks in the next few years.

For all questions related to IIT please contact Nair Abreu, Vice President in charge of education or Karla Hoffman, Vice-President in charge of meetings, who will be happy to help you to take advantage of this new offering of IFORS. 🌍

David Smith Bids IAOR Adieu as Chief Editor After Almost 20 Years

The following is reprinted from the IFORS Publication, International Transactions in Operations Research, Volume 61

To the readers of International Abstracts in Operations Research:

Editorials in IAOR are rare; someone once said that there are more algorithms for linear programming than such editorials! However, this issue is special, and therefore a letter to the readers is appropriate.

After editing IAOR since 1992, this is my final issue as chief editor. Over the years, I have tried to serve the world-wide management science and operations research community (or perhaps I should say the operational research community, as I am British and for me the letter "O" means "operational") by providing a window on the literature of our subject. In those 19 years, IAOR has published about 70,000 abstracts, taken from the worldwide periodicals of our discipline. Most of these have been taken from the journals devoted to O.R. and M.S., but a substantial minority have come from journals which are not in the mainstream. It is one of the strengths of IAOR that the abstracting has reflected the manner in which practical O.R. has been published in journals for the application area. One measure of this diversity is that I have a list of over 1000 source journals for those tens of thousands of abstracts. If you read the subject index at the back of this issue, you will see the wide range of subjects that are mentioned.

I have not worked alone; my thanks go to the worldwide team of contributing editors, who have ensured that IAOR is truly international; to the specialist editors who have looked at the literature of their chosen subset of O.R.; to the professional team at Palgrave who have overseen the production of each issue, and have promoted this journal at conferences and elsewhere; to their typesetters and proof-readers; to users of IAOR who have spotted omissions and have helped improve the service; to the officers of IFORS, whose journal this is; and last, but not least, to my wife Tina, who for many years helped sort hundreds of abstracts into order in readiness for each issue.

IAOR, both in its printed form, and in the online version, will continue. Despite the many tools that exist for searching electronically, IAOR provides a "One-stop shop" for all things concerned with O.R.. I hope that you, as reader and user, will promote this source to your students and colleagues.

From volume 62, the chief editor of IAOR will be Preston White, who has been the contributing editor for the U.S.A., and who has been a faithful supporter of IAOR throughout my years as editor. I will remain as an advisor and contributor to the journal. Please support Preston by sending suggestions for journals and articles that should appear in IAOR.

And now, with the editorial written, it is time to find a new LP algorithm! Ciao! 🌍

David Smith(D.K.Smith@exeter.ac.uk), Exeter, November 2010



David and Tina Smith



INFORMS gets on the online and analytics bandwagon

Karla Hoffman, khoffman@gmu.edu
VP for NORAM

Analytics is a term that has become a current within business circles and INFORMS, as a society, has begun an important exploration to determine what role operations research will play within this domain.

One step has been the creation of Analytics Magazine, a sister publication of the INFORMS member magazine ORMS Today. Available online at www.analytics-magazine.com/, the publication includes columns by business executives who work with operations researchers and analytics professionals. Articles explain how O.R. professionals working with their business clients are improving decision making and business processes.

Another step has been a major change to INFORMS' annual practice meeting. Renamed the INFORMS, it now includes a broad practical introduction to advanced analytics, workshops for operations research analysts on soft skills that enhance one's ability to communicate ideas and results to management, presentations by major industry figures on operations research successes as well as an executive forum. This year it will be in Chicago from April 10-12 (<http://meetings2.informs.org/Analytics2011/>).

In addition, INFORMS is preparing to launch a new Section on Analytics which will focus primarily on predictive and prescriptive analytics and will develop an understanding of the analytics process that can be described and communicated in ways that enable organizations to engage in analytics more effectively. The Analytics section of INFORMS, chaired by Michael Gorman, University of Dayton, will focus on promoting the use of analytics and fact-based decision making in practice.

Another decision made by the INFORMS Boards was to revise its webpages in order to keep pace with the internet revolution. In order to serve INFORMS members better, the association has moved the online version of ORMS Today to INFORMS Online. Check out the new version at <http://www.informs.org/ORMS-Today>. Similarly, for members who subscribe to INFORMS journals, PubsOnline (<http://www.informs.org/Sites/IPOL>), now includes featured articles, a section of pre-publication studies, and has classified articles into individual focus collections. Also online is the INFORMS LinkedIn page for members who want to make connections, ask questions, and share ideas. Find the INFORMS LinkedIn page at www.linkedin.com by searching in the Groups section of the popular website. In addition, INFORMS now offers podcast discussions with operations research newsmakers. Hear them online at www.scienceofbetter.com/podcast.

All this builds upon INFORMS traditional conferences and activities. For more on these activities, see the NORAM report in this newsletter.



Karla Hoffman

The international OR community represented by IFORS wishes to convey its deepest sympathies to the Japanese people, particularly those affected by the devastation brought by the strongest earthquake that struck Japan and the resulting tsunami. Our thoughts and prayers are with our colleagues in Japan, even as we know that the country and its people will rise above this and trust that they will be able to deal with this setback in an optimal manner.

Feedback: IFORS News Editorial of December 2010/January 2011

"Operations Research: In Search of an Identity" by Hugo Scolnik, IFORS VP at large, proved to be a popular topic, as can be gleaned from the following reactions:

From Sue Merchant, ex-president UK ORS

I thought I would just drop you a line to say that I enjoyed your article in the IFORS newsletter about the definition of OR. We have been debating this in the UK for at least the last 30 years to my knowledge, and this is one of the best definitions I've seen so far! I think the only bit missing is something about inventing our own methods as well as using others' methods, but that could of course be implied if we count ourselves as one of those scientific fields.

Reply from Hugo:

I guess many of us were looking for a definition - assuming it is worthwhile to pursue something like this - during many years.

From: Heiner Muller Merbach:

It was a pleasure to see a recent picture of you and to read your article in the IFORS News. I fully agree with your concern about a missing identity of OR.

An additional difficulty for OR is the fact that OR is – even in the OR community – understood quite differently: for some OR people, OR is more or less a subset of mathematics; for some others (such as Ackoff, Churchman, Eilon, Miser etc., some of them dead) OR is problem solving, dealing with messes, interaction with social systems etc., see: "The Great Divide" (Müller-Merbach, OR/MS TODAY, April 2007, pp. 20-21).

I do like the old ORSA definition: "Operations Research is concerned with scientifically deciding how to best design and operate man-machine systems, usually under conditions requiring the allocation of scarce resources" (in: "Careers in Operations Research", ORSA about 1977).

I believe it is hopeless to find a definition of OR which is generally accepted. I refer to Hans J. Eysenck, a psychologist, and his book on "Intelligence". He distinguishes between definitions of real objects and definitions of concepts. A table or a desk is a real object, and we can compare any definition with a set of real objects. However, there are no real objects behind concepts (such as life, intelligence, love, motivation etc.) such that we have no reality to measure our definitions.

Have you been to the Seattle Conference of INFORMS, some two years ago? There was Seth Bonder and gave a paper on the theory of OR. He came to similar conclusions as you do.

I am considering a follow-up paper to your contribution for IFORS News. I shall see.

Response from Hugo:

I agree in considering hopeless to arrive at a widely accepted definition of OR. For instance if you are optimizing machine-machine interactions - e.g. in computer networks - the old ORSA definition cannot be applied due to a lack of "man".





APORS Leadership Graces ORSC 30th Anniversary

Degang Liu, dliu@amt.ac.cn

The Operations Research Society of China (ORSC) celebrated its 30th anniversary during its annual conference held October 16-17, 2010 in Beijing. Among the 300 attendees were special guests from the Association of Asia Pacific Operations Research Societies (APORS). On hand to extend their congratulations to ORSC were APORS Immediate past President Prof. Tatsuo Oyama, Operations Research Society of Japan (ORSJ) President Mr. Fumio Sudo, Korean Operations Research and Management Science Society (KORMS) President Prof. Jinwoo Park, Operational Research Society of New Zealand (ORSNZ) President Prof. Andrew Mason, Operations Research Society of Hong Kong (ORSHK) representative Dr. Jenny Leung, Management Science/Operations Research Society of Malaysia (MSORSM) President Dr. Ilias Mamat, and Operational Research Society of Singapore (ORS) representative Mr. Toh Kaiyang. Also present were the Operations Research Society of Taiwan President Prof. Chin-Tsai Lin, along with a four-member delegation.

A special session hosted by IFORS Vice

President for APORS Prof. Xiang-sun Zhang, called on each society representative to deliver a short presentation on the practice of OR. Prof. Zhang also encouraged ORSC members to participate in the IFORS Prize for OR in Development competition. ORSC became an IFORS member in 1982.



From left to right: Ilias Mamat (MSORSM), Hsing Luh (ORSTW), Degang Liu (ORSC), Chin-Tsai Lin (ORSTW), Andrew Mason (ORSNZ), Jinwoo Park (KORMS), Kaiyang Tok (ORSS), and Chie-Bien Chen (ORSTW)

The Operations Research Society of China (ORSC) was founded after the Cultural Revolution in 1980 when the First National Conference of OR was held in Shandong Province during which time Prof. L.G. Hua was elected as its first President. 2010 also marked the 100th birth anniversary of the late Prof. Hua. His contributions to the Chinese mathematical sciences were commemorated through the publication of a special book on ORSC, holding of several competitions: for the ORSC award; practical OR projects; and young Operations Researcher awards. The top society award was won by Prof. Liqun Qi of the Hong Kong Polytechnic University. 🌐



Russian and Foreign Delegates Converge at Triennial OR Moscow Conference

Operations Research Department, Lomonosov Moscow State University, and New Economic School, Moscow, Russia, Russia
Alexander Vasin
Gerhard-Wilhelm Weber, gweber@metu.edu.tr
 Institute of Applied Mathematics, METU, Ankara, Turkey



Lomonosov Moscow State University, Main Building

The 6th Moscow International Conference on Operation Research (ORM-2010) was held on 19-23 of October 2010 in Moscow. ORM is a triennial conference organized by Dorodnicyn Computing Center of the Russian Academy of Sciences (RAS), Lomonosov Moscow State University and Russian Scientific

Operation Research Society. The program covered main theoretical fields and various applications of operations research and included 12 sections: Analysis of political processes and corruption, Applications of stochastic processes, Computer-aided design, Game-theoretic models, Markets and auctions: analysis and design, Multi-criteria optimization, Network problems, OR in economics, OR on financial markets, OR in insurance, OR in medicine, biology and ecology, Optimization methods of OR. Presenting their papers at the conference were 275 Russian and 38 foreign researchers.

Plenary talks were primarily devoted to economic applications of OR. I. Pospelov proposed a model that explains why aggregate behavior of

many similar agents looks more rational than individual behavior of a particular agent. Ya Mirkin considered different scenarios of the world economic development and the corresponding forecasts of financial dynamics. M. Vaschenko proposed a macroeconomic model for mid-term analysis of Russian economy. A. Vasin described a mechanism of corruption suppression that provides honest behavior of 100 000 taxpayers using only 10 honest auditors. V. Polterovich and O. Starkov discussed Russian realty market and the way out of the institutional trap blocking its development. A. Lotov tackled the application of multi-criteria optimization methods to water quality planning in Googong Reservoir in Australia. F. Aleskerov discussed financial investments and explained why it is not worth to try to catch "black swans" for an ordinary investor. G.-W. Weber presented new mathematical tools for the financial sector and a new robust CMARS method, even as he invited participants to IFORS 2011 and EURO 2012, and to submit papers to the IFORS Prize for OR in Development 2011.



Alexander Vasin: Optimistic about integration of Russian OR Community into the International network.

Yu. Evtushenko, M. Posypkin and I. Sigal presented a software for multi-processor computers; A. Strekalovskiy talked about modern methods of global optimization; Yu. Flerov described a new software for computer-aided design; and Yu. Pavlovskiy discussed >>



>> mathematical tools and humanitarian aspects of military applications of OR. Detailed information about the proceedings are available at http://io.cs.msu.su/index_eng.htm.

The careful planning and preparation for the conference and the high quality of papers presented were attributed by those present to the traditionally excellent Russian university education, culture of scientific discourse, as well as the international nature of the conference. Future collaborations were explored among individual scientists, local and nationwide groups, and various OR organizations. A. Vasin was optimistic about the further integration of the Russian OR community as he himself is already actively involved in conferences of GOR, EURO and IFORS.

Against the backdrop of the winter days in the impressive and booming city a Moscow, where old Russia and a Russia of the future have begun to blend in an exciting way, the scientific excellence of the conference was further enriched by the sincere interest to deepen friendships and fruitful collaboration among the participants,



▲ G. Weber with Russian friends

Acknowledgement: G. Weber wishes to thank EURO for its support of his participation in ORM2010. 🌐



OR in Finance Tackled in 24th Mini-EURO Conference

Cemali Dinçer (Department of Industrial Systems Engineering, Izmir University of Economics)

Refail Kasımbeyli (Department of Industrial Systems Engineering, Izmir University of Economics)

Gerhard-Wilhelm Weber, gweber@metu.edu.tr (Institute of Applied Mathematics, METU, Ankara, Turkey)

The 24th Mini-EURO Conference on “Continuous Optimization and Information-Based Technologies in the Financial Sector” (<http://cs.ieu.edu.tr/europt-2010/>) was held at the Izmir University of Economics from June 23 to 26.

The scientific event included 37 parallel sessions each consisting of up to 4 presentations for a total of 154 presentations. All sessions were well attended with periods of intensive after-presentation exchanges, an indication of the scientific interest in the various developments and trends of optimization, data mining and related fields of modern OR in the financial sector.

Authors from 32 countries numbered 221 with the breakdown as follows: Algeria (6), Australia (4), Austria (2), Azerbaijan (19), Brazil (4), Chile (1), Czech Republic (2), Finland (3), Germany (10), Greece (5), Hungary (1), India (1), Ireland (1), Islamic Republic of Iran (7), Italy (4), Japan (2), Lithuania (2), Luxembourg (1), Mexico (1), Netherlands (2), New Caledonia (1), Nigeria (2), Poland (2), Portugal (1), Qatar (2), Romania (1), Russian Federation (2), Singapore (1), Spain (1), Turkey (112), United Kingdom (4) and United States (14).

The scientific programme included six plenary sessions, presented by

- **Terry Rockafellar** (University of Washington, Seattle, USA): “Decision The Fundamental Quadrangle of Risk in Optimization and Estimation”,

- **Roger J-B Wets** (University of California, Davis, USA): “Decision Managing a Fixed-Income Portfolio”,

- **Panos M. Pardalos** (University of Florida, Gainesville, USA): “The Critical Nodes Detection Problem in Networks”,

- **Juan Enrique Martinez-Legaz** (Universitat Autònoma de Barcelona, Spain): “A Contribution to Duality Theory, Applied to the Measurement of Risk Aversion”,

- **Ulrich Horst** (Humboldt University, Germany): “Equilibrium Pricing in Incomplete Markets under Translation Invariant Preferences”, and

- **Süleyman Özekici** (Koç University, Turkey): “HARA Frontiers in Portfolio Optimization”.

Four semi-plenary sessions were conducted by:

- **Kenneth Kortanek** (University of Pittsburgh, USA): “Using Optimization for Solving Dynamic Cash Flow Matching Problems under Uncertainty”,

- **Georg Ch. Pflug** (University of Vienna, Austria): “Risk Measures: Time Consistency versus Information Monotonicity”,

- **Asaf Hajjiyev** (Azerbaijan National Academy of Sciences, Baku, Azerbaijan): “Regression Models with Increasing Numbers of Unknown Parameters. Control by Queues with Complicated Structure”, and

- **Refail Kasımbeyli** (Izmir University of Economics, Turkey):

“Solution Methods Based on Conical Supporting Surfaces in Nonconvex Analysis and Applications in Financial Optimization”.

The participants enjoyed the intensive social program which included a wine and cheese party, welcome reception, conference dinner at İzmir Konağı Restaurant, banquet at Derya Restaurant and an Excursion to the Antique City of Efes (Ephesos), House of Virgin Mary and Şirince Town.

The scientific and social program were made possible by the sponsorship of the Izmir University of Economics, Association of the European Operational Research Societies (EURO), EURO Working Group on Continuous Optimization (EUROPT), the Operational Research Societies of Turkey (ORST) and Germany (GOR), and Middle East Technical University. The Izmir University of Economics, Izmir Chamber of Commerce, Central Bank of the Republic of Turkey, The European Office of Aerospace Research & Development (EOARD), EURO, The Scientific and Technological Research Council of Turkey (TÜBİTAK) and NETSIS Software provided financial support for the conference.

The conference proceedings were published as an ISI Proceedings Book (ISI: International Statistical Institute) and on CD-ROM, with ISBN. This proceedings volume includes the full papers of the communications presented at the conference, which underwent a peer refereeing process. The authors have been invited to prepare improved versions of their papers for submission to special issues of the Journal of Global Optimization, Optimization, Transactions on Operational Research and International Journal of Lean Thinking. The papers submitted for publication in these special issues will follow the normal reviewing process required by these journals. 🌐



▲ Prof. Dr. Refail Kasımbeyli and Prof. Dr. Ralph Tyrrell (“Terry”) Rockafellar



▲ Impression from the Conference Dinner (with View on the Gulf of Izmir)





ORSSA Journeys on to the 2011 Conference

Dave Evans, DaveE@dbsa.org



its website: www.orssa.org.za/

The Society works to spread the visibility, use and benefits of Operations Research (OR) in Africa. It hosted an International Conference on OR in Development in 2001, an Operations Research Practice in Africa conference in 2007 and the prestigious IFORS Triennial Conference in 2008, attended by several hundred practitioners from all over the world. In 2010, ORSSA decided to spread its activities more widely across Southern Africa, hence the 2011 conference at the Victoria Falls, Zimbabwe.

ORSSA's 2010 conference was held at the University of Limpopo (UL), the first time that the national conference had been held at a historically disadvantaged university. It was an outstandingly successful well attended conference, and included several participants from the Zimbabwean National University of Science and Technology (NUST) in Bulawayo. The Society's National Executive Committee was already considering the Victoria Falls as a possible venue for the 2011 conference, as part of an African Outreach initiative. That was also proposed by Prof James Cochran, of the Louisiana Tech University, during his keynote speech in the opening plenary session of the 2010 conference, in which he highlighted the need to spread Operations Research more widely across Southern Africa. Professor 'Maseka Lesaoana of the UL and Caston Sigauke and Philimon Nyamugure from NUST were also exploring a similar concept. Clearly, this was an 'idea whose time has come.'

With the conference theme of "Spreading Operations Research Across Africa", ORSSA is moving in its stated direction, to expand the knowledge and use of OR in the wider region.

The NUST Local Organising Committee (LOC) chaired by Edward Chiyaka (edward.chiyaka@gmail.com) has started contacting local and neighbouring universities across Southern Africa to encourage participation in the conference. 'Maseka Lesaoana, Caston Sigauke, Daniel Maposa (all at UL), Dave Evans (ORSSA President) and Ozias Ncube (University of South Africa), who were all involved in the organisation of the 2010 conference, will assist the NUST based LOC in making sure the 2011 Conference is a success. Prof Jan van Vuuren (University of Stellenbosch, and Vice-President of ORSSA) will be responsible for the conference programme, and James J. Cochran will also provide support from the United States.

ORSSA and NUST feel strongly that hosting the 2011 Conference outside the South African borders will assist in spreading the message of Operations Research across Southern Africa. The OR community at NUST believes that hosting this conference in Zimbabwe will encourage the development and broaden the application of OR in Zimbabwe. It will also help the foundation of the Zimbabwe Operations Research Society which has been delayed due to the economic challenges the country has been facing, and will strengthen collaboration among operations researchers in the Southern Africa region in particular, and also in the rest of Africa. One of the LOC's targets is to contact and market this conference to all the universities in the SADC region and ensure that besides Zimbabwean and

South African participants, the conference will attract at least one presenter from each of the remaining thirteen countries of SADC and at least ten participants from other African countries.

NUST has a long history of offering Operations Research as a discipline. Given the high calibre of OR education in Zimbabwe and the links between OR and industry from the onset, as well as the visible presence and increasing numbers of NUST operations researchers (both students and lectures) at ORSSA conferences since the 2007 conference at the University of Cape Town, Zimbabwe was an attractive choice.



Dave Evans

Operations Research in Zimbabwe

Operations Research in Zimbabwe started in the 1970s with elective courses offered under Engineering and Statistics degrees at the then University of Rhodesia. Although it was not called Operations Research during those years, courses such as Systems Engineering, Optimisation, Decision Theory, and Mathematical Programming were found in several relevant degree programmes. The current president of ORSSA, Dave Evans, lectured OR, thinly disguised as Systems Engineering, at the then University of Rhodesia (Now University of Zimbabwe), in the late seventies. In the early 1980s, after the country attained independence, the secondary school mathematics syllabus was reviewed and courses that included linear programming were introduced and are still being offered.

In 1995 Professor Santosh Kumar introduced Linear Programming, Operations Research, Queuing Theory, Decision Theory and Stochastic Processes at the National University of Science and Technology. These courses were offered under the Applied Mathematics Honours degree programme. During his tenure as the Chairman of the Applied Mathematics Department, the MSc degree in Operations Research was introduced in 1998. The following year a Special Honours Degree in Operations Research was introduced, catering mainly for candidates who had general degrees in Mathematics/Applied Mathematics, Computer Science and other relevant qualifications. In 2005 a four year bachelor of Operations Research honours degree was introduced in the Department after recommendations from Industry and Commerce. The same year lecturers in Operations Research and Statistics established a Statistics and Operations Research Group which started marketing Operations Research across the country, including exhibiting at the Zimbabwe International Trade Fair for four consecutive years.

Zimbabwe as Conference Venue

Victoria Falls, the host town, is a major Southern Africa tourist destination, with its world renowned magnificent falls, and will present delegates an opportunity to view and explore them. Besides the falls, the town is host to many tourists attractions such as game viewing, bungee jumping, white water rafting, helicopter sight-seeing, kayaking, sunset cruises, elephant rides, a lion walk, game drives, and river boarding, to mention but a few. One of the days for the Conference is going to be reserved exclusively for excursions, and delegates will be given an opportunity to experience the hospitality of the people of Zimbabwe. 🌍



The 19th Triennial Conference of the International Federation of Operational Research Societies (IFORS) will be hosted by the Victorian chapter of the Australian Society for Operations Research (ASOR).

The conference will bring operational researchers from around the globe together. Almost 1500 abstracts were submitted on a very large range of operational research areas by the close of abstract submission. Specific streams are listed on the conference web site.



The theme of this conference is World OR: Global Economy and Sustainable Environment. This is apt in our urgent need to effectively manage resource issues to assist in raising global living standards subject to environmental constraints and we have seen the seriousness of the issue both in responses to the recent global financial crisis and the rising impact of man's impact on the environment.

There will be plenary talks given by 1996 Nobel laureate Sir James Mirrlees on regulation of Optimum choice sets, by Dr Brenda Dietrich from IBM on the booming field of Business Analytics and by Prof Danny Ralph from Cambridge University on Risk modelling with particular reference to power plant investment. More details of these talks are on the web page.



Melbourne Convention Centre

The conference will be held at the new Melbourne Convention Centre in the centre of the city of Melbourne, Australia from the 10th to the 15th July 2011. This centre is adjacent to the Hilton South Wharf Hotel but nearby there are many other hotels and additional accommodation in a range of prices.

Melbourne is a dynamic city of over 4 million people on the banks of the Yarra river and around Port Phillip Bay on the southern tip of the Australian mainland. It enjoys a temperate climate and a host of outstanding attractions for the visitor and repeatedly appears at the top of the list of the world's most liveable cities (second on the Economist 2011 list again).

Melbourne is an attractive and friendly city with many parks and a high concentration of world class sporting venues in the centre of the city. A former Summer Olympic city, it is also a leading centre for food, fashion and the Arts in Australia.

Delegates will also have an excellent opportunity to explore the hospitality and natural beauty of the state of Victoria itself, as well as the rest of Australia and New Zealand.

Melbourne, Australia

The social program includes the welcome function, banquet and midweek trip options. The Conference and Travel Organisers, will assist you with all your travel reservations including flight, transfer, tour and hotel bookings, giving you the convenience of registering and making your reservations in one place

For any further information on the conference you should visit the webpage <http://www.ifors2011.org/> 



Dr Patrick Tobin
Chairman ,
Conference Organising Committee
Lecturer in Mathematics
Australian Catholic University
Patrick.Tobin@acu.edu.au



Kaye Marion
Secretary , Conference Organising Committee
Senior lecturer in
Operations Research and Statistics
RMIT University
k.marion@rmit.edu.au



Results of the OR Practice Survey

John Ranyard, jranyard@cix.co.uk



In September I reported on progress with the IFORS-commissioned survey of OR practice in member countries and requested further responses. At the deadline of end-November 2010, 254 usable responses had been received, as summarised in Table 1.

Just over 60% of responses are from the USA and UK, which means that the results of some analyses will need to be interpreted with care. There is, however, a good representation of the different types of organisation. Analysis of the responses is now underway and some initial results have already been obtained. The final results will be presented in two sessions at the IFORS conference in Melbourne in July, as described below.

Some Initial Results

It is clear that OR practitioners are extremely well qualified academically, as Table 2 demonstrates. Overall, 85% of respondents have a postgraduate qualification (PGQ), varying from 66% to 93% between the IFORS regions.

All respondents have a first degree and as expected maths, statistics and engineering are the most common subjects, making up

TABLE 2: POSTGRADUATE QUALIFICATIONS (PGQs)

Qualification	Number (%)
MSc - OR	69 (27%)
MSc – Industrial Eng	16 (6%)
MSc – other	57 (22%)
PhD – OR	30 (12%)
PhD – Industrial Eng	10 (4%)
PhD - other	52 (20%)
Total	234
No PGQs	37 (15%)
Number with PGQs	217
Sample size	254 (106%*)
% with PGQs	85

almost two thirds of the total.

Final Results

Two sessions at the Melbourne conference are being devoted to presenting and discussing the results of the survey. I will present the background to the survey and the overall results and in addition some country/region Representatives have kindly agreed to add their own perspective and local knowledge to 'their' survey responses.

TABLE 1: RESPONSES by REGION & ORGANISATIONAL TYPE

Region	ALIO	APORS	EURO	NORAM	Total	%	(USA)	(UK)
Type of Organisation								
Public	0	3	59	13	75	30	8	16
Private	2	14	25	41	82	31	36	52
Consultancy	2	12	21	20	55	22	19	13
Academic	8	6	16	12	42	17	10	0
Total	12	35	121	86	254	100	73	81
%	5	14	47	34	100			

TABLE 3: SUBJECT OF FIRST DEGREE

SUBJECT	NUMBER RESPONDING (%)
Maths/Stats	79 (35%)
Sciences	35 (16%)
Engineering	32 (14%)
Industrial Engineering	30 (13%)
OR/MS	21 (9%)
Other*	29 (13%)
Total Known	226 (100%)
Unknown	28
Total Returns	254

The full programme is as follows and abstracts of the individual presentations are given in the Annex to this note:

Melbourne Conference: IFORS Survey on OR Practice

1. Overall Results of the OR Practice Survey

John Ranyard, Survey Project Leader

2. Some Key UK Results from the OR Practice Survey

John Ranyard

3. OR Practice in North America

Karla Hoffman, IFORS Vice-President, NORAM

4. OR Practice in The Philippines

Elise del Rosario, ex-President IFORS

5. OR Practice in Australia and New Zealand

Simon Dunstall, CSIRO, Australia, Baikunth Nath, IFORS Representative Australia, David Ryan, IFORS Representative, New Zealand

6. OR Practice in South Africa

Hans Ittmann, IFORS Representative, South Africa

General Discussion – Implications for IFORS

Come and Join Us

Conference delegates who are interested in OR practice are urged to attend these sessions and contribute to the general discussion which will inform the IFORS Executive on how best to reach out and support practitioners. 🌍



IFORS CONFERENCE, Melbourne, July 11-15th, 2011

OR PRACTICE STREAM

Session 1: IFORS SURVEY on OR PRACTICE 1

Overall Results of the OR Practice Survey

John Ranyard, Management School, Lancaster University, UK

Abstract: IFORS have commissioned a survey of OR practice in member countries, so as to gain a better understanding of the usage of quantitative tools, techniques and approaches and their impact on decision-making in organisations, as well as the background of the OR analysts involved. It is expected that the results will enable IFORS to improve their support to and promotion of OR in member countries. Over 250 practitioners from 28 member countries completed a comprehensive on-line questionnaire and some overall results will be presented.

Keywords: OR Practice; Survey

Some Key UK Results from the OR Practice Survey

John Ranyard, Management School, Lancaster University, UK

Abstract: Over 80 responses to the IFORS survey were received from UK practitioners. Some key results will be presented, covering the location of OR services, techniques, methodologies and software used, barriers to the use of OR and personal education and training received. Changes compared to a similar survey which was carried out 15 years ago will be highlighted. Some comments on current issues facing OR practitioners in the UK will be made.

Keywords: OR practice; survey; problem structuring methods

OR Practice in North America

Karla Hoffman, Department of Systems Engineering and Operations Research George Mason University, USA

Abstract: We present results from a survey on OR practice that was distributed to a few of the practice subdivisions within INFORMS. We also describe the recent activities related to the new theme of "analytic" that has made the sale of OR activities much easier and understandable to a wider business community.
Keywords: OR Practice; Profession of OR

Session 2: IFORS SURVEY on OR PRACTICE 2

OR Practice in The Philippines

Elise del Rosario, ex-President IFORS, The Philippines

Abstract: OR practice has a definite presence in the Philippines but it is not widespread in the business community, with Internal OR consultants in less than 10 companies. Size of group, experience and training of analysts, barriers to the use of OR, OR techniques and software used will be given. Companies without in-house OR relegate quantitative analysis to engineering, corporate planning and management services departments. External consulting firms do not ordinarily use OR methodologies, whereas academic consultants do. OR applications cover long-range to operational decisions, in the areas of logistics, facilities, manpower, service operations planning, risk management and marketing. The most used tool reported is spreadsheet modelling. The Philippine OR community is tightly knit and practitioners,



from a diversity of industries, are members of the national OR society, which aims to link academe with practice. Whilst some OR groups have disbanded, others have formed, and so the size of the OR community has stayed around the same level.

Keywords: OR Practice; Developing Countries

OR Practice in Australia and New Zealand

Simon Dunstall, Mathematics, Informatics and Statistics, CSIRO, Australia, Baikunth Nath, University of Melbourne, Australia, David Ryan, Engineering Science, University of Auckland, New Zealand

Abstract: The survey findings for the two countries will be summarised and key features of OR practice will be described. Several organisations in both countries have strong OR teams, some of which have received international acclaim e.g. via the INFORMS Edelman competition. Some challenges facing the OR practice communities will be outlined.

Keywords: OR Practice

OR Practice in South Africa

Hans Ittmann, CSIR, South Africa

IFORS commissioned a survey of OR practice in member countries. A number of OR practitioners in South Africa also responded. In this talk the results from the survey will be presented. In addition further background will be given to the practice and use of OR in the country as well as where the major challenges lie. The OR society in South Africa organises an annual conference and publishes its own journal bi-annually. Information from these sources will be used to supplement the results from the IFORS survey.

Keywords: OR Practice

General Discussion: Possible Issues

1. How can IFORS promote OR practice
2. What is the role of country OR Societies in promoting OR practice?
3. What definition of OR should be used?
4. How is OR practice organised? In-house eg project based in OR groups or integrated into functional management teams eg logistics; or via external consultants
5. How can OR practitioners be identified?
6. ?? 



OR Features in a French Podcast

Jean-Charles Billaut, jean-charles.billaut@univ-tours.fr



Jean-Charles Billaut, Professor of Computer Science at the Polytechnic School of the University of Tours was interviewed in the 29th episode of the podcast Interstices.

Interstices (<http://interstices.info>) is a web site in French created in 2004 by researchers to make available to a wider audience the sciences and technologies of information and communication. It features games that have been developed to illustrate famous OR

problems such as knapsack, partition, travelling salesman, two-machine flow shop and others.

The following is a translation from French of the Interview about OR. (In the interest of space, some answers have been shortened.)

1. What is Operational Research?

Operational Research is a scientific discipline at the interface of mathematics and computer science. It aims to provide decision support to solve specific problems and it is based on mathematical modeling. The term Operational Research dates back to World War II, The first applications of this research was 'operational', having involved the optimal positioning of surveillance radars.

2. What are the application areas of operational research today?

Operations research is used in many fields. I mention for example the field of industrial production where one of the first problems addressed concerned the scientific management of inventory through calculations of optimum order quantity. Production scheduling was also optimized as it helped come up with sequences of tasks that minimize either delays in deliveries or the amount of work-in-process.

More recent issues addressed involve managing the entire supply chain from raw material suppliers down to the delivery of the finished product to the customer. There are also numerous applications in the transport sector. For example, companies like SNCF (French railway company), seek to build robust schedules which are not greatly affected by hazards, by optimizing the use of sectors in case of incidents. Applications in the airline sector, road transport, urban transport (school bus, waste collection, etc.), telecommunications networks and computer networks abound.

3. What are the issues of operational research?

OR has progressed enormously over the last thirty years. To give you an idea, a problem that needs a year to solve in the 80's can now yield a solution in a few seconds. So, it is easy to understand how both the number of applications of operational research methods and their performance have increased dramatically. Today, we see applications in many emerging fields as well as find satisfactory solutions to large scale problems that were impossible in the past.

4. What are emerging areas of which you speak?

Emerging areas include the energy sector which for one, deals with the optimization of energy consumption. Another one is sustainable development and reverse logistics chain, i.e. the coming back of products for recycling. It can also be the problems of humanitarian logistics when natural disasters such as a tsunami or an earthquake strike. And many applications in the field of health such as those involved in hospital logistics, optimization of operating rooms and use of hospital resources.

5. I see that OR solves many problems in various fields. How does OR solve these problems?

When we are faced with a problem that can be addressed by operational research techniques, the solution process involves several steps. The first step is modeling. Here, we seek to establish a mathematical model which represents the real problem as closely as possible. This goes through

several iterations of discussions with people who pose the problem, identifying clearly the information available, considering constraints - meaning the elements that make a solution infeasible as well as conditions that cannot be violated, and identifying all the levers, or the elements that define the solution.

6. Could you give an example to clarify this?

In Tours, we are working in the field of hospital logistics. The University Hospital has several hospital units in different locations. Meal trays assembled in one place, have to be delivered to the other sites at the same time. Clean and soiled linen are delivered/collected from all sites. Drugs are distributed by the pharmacy. With sterilization and records management activities happening at the same time, it is clear that there are numerous flows among all the hospital unit sites. The problem was to ensure smooth delivery activities that avoid congestion of vehicles at the hospital. Another concern was also to estimate the number of people needed to compose a team in charge of handling these.

7. So the hospital turned to OR specialists - what happened next?

The first thing to do was to know exactly what information we have and what the person who owns the problem wants. Does he want help in specifying new routes, a manning complement plan, or a fleet plan for the delivery trucks? Do we know exactly the quantities to be delivered to each hospital unit? Or will we have to make a 6-month investigation in order to get this information? Is this information available? Oftentimes, people who come to us cannot readily provide the information we need and much less, the constraints and their objective.

8. That is to say . . .

For instance, suppose that now, there are 10 people assigned to drive the trucks. We have to know if this number is a constraint that we cannot change or if it is something that we can modify. Is it part of the data? Is it part of the constraints? Is it the objective? This could only be provided by the people who bring you the problem.

9. After ascertaining data and constraints and establishing an appropriate model, what do we do with this model?

If the model had been well written mathematically - most of the time we write it as a linear program - it can be solved. Solution may be through the use of commercial software available in the market. These software use generic resolution methods of linear programming. While they work, they can be expensive! The other option is to use free software. In many cases, they are less efficient and often will not suffice for the problem at hand. The third option is to develop our own solution methods.

10. Please talk about these methods.

Let's take tree decomposition methods as an example. The tree methods enable one to explore the solution space intelligently - making it unnecessary to evaluate the whole set of solutions in order to find the best one. These techniques are also common with artificial intelligence. Other methods are based on constraint programming, a complete set of algorithms of graph theory, dynamic programming methods that may apply in some cases, and game theory. We can also use approximate methods which provide an approximate solution to the problem. Here, there are also generic methods. For example, tabu search or simulated annealing, and then, quite recently, methods of collective problem solving, also called evolutionary algorithms or bio-inspired algorithms like genetic algorithms, ant population based algorithms, swarms of bees, etc., have been used to arrive at solutions to the models formulated.

11. How do you select the method to use?

It depends of the problem and on the expertise and experience of the OR person. For some problems, we know which techniques will be effective and which ones will get you nowhere. We therefore lean on methods known in literature to be the most promising ones. But that does not prevent experimenting with other methods, testing them, and keeping the best solution. In the end, the method used depends on the expertise of the OR problem solver. >>



>> 12. You speak of expertise. Do the OR experts belong to a dynamic community?

The OR community is booming. The annual conference of the French Operational Research Society now routinely attracts 400 participants (600 in 2011). The European OR Conference counts about 2800 delegates while the United States attracts more than 4500 participants to its conferences each year. The number of PhD theses, jobs in higher education are growing, a reflection of the increasing availability of opportunities in the field of OR.

13. In conclusion, what are the limitations of operational research?

Operational Research is particularly applicable when you have available information and quantifiable goals such as minimizing costs, reducing delays, reducing energy consumption, When issues are well defined and can be quantified, we will be able to implement operational research models. While determining an efficient schedule for the tram is an OR problem, designing a beautiful tramway is not within the domain of OR. 🌍

Book Review: Herding Cats

Hans W Ittmann, Hittmann@csir.co.za

Herding Cats – Being advice to aspiring academic and research leaders by Geoff Garrett and Graeme Davies, 2010, Triarchy Press, Devon, UK, pp. 118. ISBN: 978-0-9565379-5-9. 21.06 US dollars.

Every so often, one reads a cameo of a book that you just have to share with others. Herding Cats is such a book. The book is not about operations research. However, the topic is something many will be able to associate with and appreciate. **There are many operations research professionals who are academics and researchers worldwide. These institutions have one major characteristic, namely those employed “like to exercise as much independence as possible in their professional lives”. All of them consider themselves to be professionals in their own right, they ‘know better than anyone else’ and typically have strong views. In addition, they operate very much like “cats”.** Herding Cats is thus an appropriate metaphor used as the title of the book since “Cats will not be commanded and can choose their owner” (Cats by Valeria Manfredi De Fabianis (ed), 2007). How do you lead and manage “cats” in such research and academic institutions?



Garrett and Davies have between them many years of experience in managing or leading international academic and research institutions. Their experience and wisdom have been gleaned from their involvement in institutions in South Africa, Australia and the United Kingdom. In writing the book, they also asked for inputs of a number of senior leaders whom they have known from across the world. Some 50 people provided inputs as well as quotes or words of wisdom in response to these questions:

- What do you know now that you wish you had known ‘back then’;
- If you are mentoring a new leader, what would you wish to share concisely about

‘operations’ ... about ‘strategy’?;

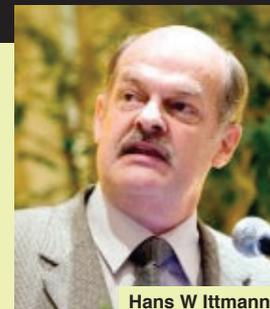
- What are your favourite ‘war stories’?; and
- What, in your opinion, brings out the best (and worst) in your people?

The format of the book is fairly novel. The authors provide the text on various topics, their own views and then they present the wisdom from the leaders who had submitted their inputs. There are also quotes from famous people and finally as a summary, Garrett and Davies offer their thoughts, views and insights on the topic. This makes reading the book easy; one can start anywhere without going through it from the start to the end.

The framework of the book consists of a short introduction, four sections or chapters and a postscript. Each section has a number of subsections; the essence of each subsection is captured by a single ‘C’ word.

Understanding the culture of an institution is presented in section A. Culture is a critical aspect of organisational life and describes “the way we do things around here”. The subsections are titled “Aspects of the Culture”, “On Conflict” and “The difficulty of Collaboration and boundary crossing”. The issue is presented under each heading and various perspectives provided. The issues highlighted under “aspects of the culture” include ‘cats will not be commanded...’, ‘learning from history...’, ‘why are we here?’, ‘the political bias’, ‘talking straight’ and ‘bureaucracy rules, OK?’. A quote used in discussing bureaucracy is interesting: “The

biggest thing that I have found out through the years is that many people in research are actually bureaucrats. I would have expected them all to be interested in the future, wanting to change the world, brimming over with enthusiasm to get on with the job and deliver useful results. This took me a long time to realise and I think I would have been much more effective if I had understood that there are a lot of people who really do not want to see much in the way of change, and that includes a lot of R&D people”.



Hans W Ittmann

The next topic that is introduced and handled in detail is “Getting the Job done”, with the emphasis on “taking Charge”, “Composure under pressure and the implementation imperative”, “Committees, etc.” and “Managing the Cash”. Section C deals with “Managing the People” that is so crucial in these organisations but also very complex. Everyone is considered “Colleagues not subordinates”, while “Communication, Communication, Communication” is absolutely necessary as well as “giving Credit”. From my personal experience, Garrett himself was a great communicator, almost in the Ronald Reagan mode! Finally “Leading Strategically” is discussed under two main headings namely “Strategy is about Choice” and “Leading and Managing Change”. Many a wise word is uttered throughout the text. It is certainly more difficult “to push cats” to a destination than it is to tempt them to an outcome”!

One of the contributors to the guidebook summarises the essence of leading “cats” as follows:

I reckon there are five key dimensions to leadership in a research and development or academic environment...

- Research leaders must have a vision of where they want the organisation to go – because, if you don’t, no one else will.
- You articulate it, and communicate it well, to get your people excited.
- You hire the best people you can find.
- You create the environment where they can excel and succeed.
- You get out of the way.

Finally a “checklist” for leadership in these types of organisations is presented. The “items” on the checklist are: culture, conflict, collaboration, charge (the taking of), composure, committees, cash, colleagues, communication, credit, choice and change. It is not a surprise that these are called the 12 Cs, referring to the 12 subchapters addressed in the four chapters, and with a strong linkage to Cats!! Does this all work? The authors themselves indicate that they merely provide advice and these twelve Cs are certainly not “Commandments”! Nevertheless this guidebook is a very useful source for any leader or manager in a research or academic institution. It does not stop at describing and outlining the complexities associated with these institutions but continues on to provide advice from old hands who have ‘walked the road’. This makes the book very useful to those new to the task and challenge.

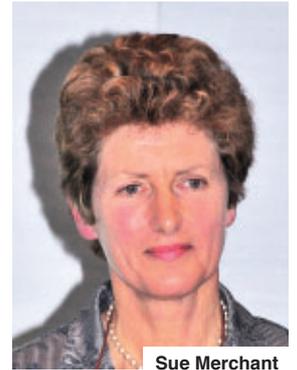
Containing a huge amount of common sense, this pocket-size guidebook is highly readable and ‘digestible’. It is a very usable roadmap for those in leadership positions of a very tough and difficult environment. The authors have succeeded in providing readers with an understanding of the challenges of managing organisations where conventional approaches are almost surely doomed to fail. It is a great read!

(For many years, the reviewer was a “cat” who has moved on to “herding cats” in the institution led by Garrett.) 🌍



Sharing OR good practice across the UK's criminal justice sector

Sue Merchant (suemerchant@hotmail.com), Blue Link Consulting UK



Sue Merchant

As I'm sure readers are well aware there are many barriers to overcome in trying to tempt OR practitioners to share good practice with each other. For example, those who work as internal consultants often receive little encouragement to write up their work externally or attend conferences, believe that there is likely to be little benefit to their careers for so doing, and worry about displaying their employer's problems to the world at large – especially to competitors or the media. Also when I was an internal consultant I found that quite often the client would ask for a more urgent piece of work to be done before the end of the project so it wasn't always possible to finish the first piece, let alone write it up! Those analysts working for external consultancies also have to wrestle with issues of client confidentiality and competition from other consultants.

This being the case I thought that IFORS members might be interested to hear about some small steps we have taken in the UK to pull practitioners in a particular field together, requiring minimal time commitment yet producing some useful benefits. The field I refer to is that of Criminal Justice, which we have interpreted widely to include everything such as crime prevention, crime detection and arrests, prosecution, courts, sentencing, prison, probation services and other relevant after-care. OR clients in this field of work include policy makers in public services in central government (Ministry of Justice and Home Office) plus Police Forces, Courts and Probation Services.

There are a number of OR analysts working in these fields and a few years ago a group of UK OR Society (ORS) members set up an ORS Criminal Justice special interest group to help to 'join up' the various parts of the Criminal Justice system and share good practice. We now have about 60 members who try to meet about two or three times a year (including at the annual ORS conference where we try to arrange for most papers to be on one day) to discuss case studies and share good practice. Members have been drawn to date mostly from the Home Office, Ministry of Justice and police forces plus a few academics, though we are hoping to attract members from other parts of the sector in due course. I might add that we are not the only special interest group to try to share good practice in this way: for example the ORS also has a very active Health special interest group.

The meetings are held in a location with good transport links such as London or Birmingham and take place between 11am and 3.30pm with a sandwich lunch to allow for networking. We usually invite about 5 or 6 speakers, each given around three quarters of an hour to present a case study or discuss a topic of interest. Generally about 15-25 members manage to attend events and feedback has been positive. Occasionally we have joined forces with other special interest groups (such as Simulation). Benefits seem to be wide-ranging and include: the opportunity for academics to present some early thoughts on their research in a 'safe' and practical environment where good contacts can be made; consultants from different OR fields liaising to discuss possible collaborations; consultants learning more about the Criminal Justice world and thus being better equipped to do good work in it; internal analysts in different parts of the Criminal Justice system learning more about the system as a whole and its different traditions and cultures, thus reducing the risk of sub-optimisation and improving partnership working; internal analysts being inspired to develop new types of solutions to problems, being reminded about old ones or simply picking up some good tips. We have on occasions tried to invite clients along to meetings also – in fact the Chief Constable of a major UK police force did come along on one occasion! - but we have not yet been very successful here despite several acceptances. We will keep trying!

A few examples of talks which have been given include:

- The use of Soft Systems Methodology to identify desirable process changes in a police call handling centre, with a view to helping to improve force performance against a number of key indicators.
- The early stages of research into urban violence, using MCDA and

System Dynamics, with a view to anticipating violence better in future

- Process reviews and comparative cost benefit analysis to help a police force decide whether moving to digital suspect interviewing would be cost effective.
- The use of simulation to examine the impact of sentencing policy on rising prison populations and to help look at possible inconsistencies in sentencing decisions.
- An overview of a high level model which maps the flow of offenders through from offence to completion of retribution, and can be used to observe the effects of pulling certain policy levers.
- The use of simulation methods in improving the speed of forensic examination of samples.
- The use of simulation and optimisation methods to improve the matching of police resources to demand by developing more effective shift patterns.
- A discussion of what factors contribute most to the on-going successful implementation of models when the consultant has moved on.
- A spreadsheet simulation used for short term forecasting of caseload in courts.
- An evaluation of the effectiveness of CCTV in reducing crime on railway stations.

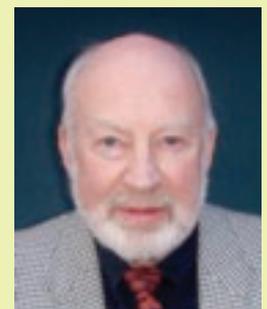
If any IFORS newsletter readers would be interested in telling us about other applications they have found for OR in their Criminal Justice systems, or indeed about ways they have found for bringing practitioners together, the group would be very pleased to hear from them! 🌍

Sue Merchant spent most of her career working as an OR analyst and senior manager for London's Metropolitan Police and is now an independent consultant. She was President of the UK OR Society from 2008-9.

Subjectivity of modeling

**Prof. (em.) Dr. Heiner Müller-Merbach (hmm@bior.de)
Universität Kaiserslautern, Germany**

In summer 1981, Richard Gault from Ireland visited my chair for a few weeks. He was much interested in modelling, general and special aspects.



Dr. Heiner Müller-Merbach

One day, we happened to talk about animal voices. We chose a cock's cry as an example. I said: "Any cock cries kikeriki", the "i" pronounced such as "ee" in creek. Richard laughed: "British cocks cry cock-a-doodle-doo". I laughed as well: "Does that mean that British and German cocks do not understand one another?"

In order to prove that German cocks cry "kikeriki", I took Richard to a chicken farm. When we heard the cocks cry, both faces began to cover with a triumphant smile, and we commented unison: "Exactly what I said", Richard: "cock-a-doodle-doo!", and I: "kikeriki!"
If we had a Frenchman with us, he would have insisted on "cocorico!", and a Spaniard would have insisted on: "quiquiriqui!".

Finally, Richard and I agreed happily that the difference between an Irish cock's cry and a German cock's cry etc. could hardly be recognised by human ears nor can a cock's cry be satisfactorily spelt in any human language. >>



>> We only follow the tradition of our languages and come up with different language-bound models of animal voices. "kikeriki" is only the German model of a cock's cry.

This can be generalised: Any term (or word), any mathematical expression, any drawing, any map, any graph, any score (musical composition) etc. is a model of somewhat. It depends on our education and our experience whether we understand a model and whether we can use a model for the interpretation or design of reality. It does not even matter if we use the term "model". We can use "image" as well or pattern or form or figure etc. They form our "internal stages" by which we perceive the world in its static structures and in its dynamic processes. One (out of many) introductions to mental modelling is the famous book "The Image – Knowledge I Life and Society" by Kenneth E. Boulding (1956).

Mental and explicit modelling is the business of any scientist, Operations Researchers and Management Scientists included. 

Member Society News

Ed Coffman wins Larnder Prize

Wieslaw Kubiak, wkubiak@mun.ca

Professor Ed Coffman is this year's recipient of the Harold Larnder Prize, awarded annually by the Canadian Operational Research Society to an individual who has achieved international distinction in Operational Research. Professor Coffman was selected by CORS for his exemplary contributions to OR in all three areas that matter to academics: research, teaching, and service. Professor Coffman will give the Larnder Memorial Lecture at the CORS conference in St. John's (May 30-June 1, 2011), where he will speak about modeling dynamic resource allocation. Harold Larnder was a well known Canadian in wartime OR. He played a major part in the development of an effective, radar based, air defence system during the battle of Britain. He returned to Canada in 1951 to join the Canadian Defence Research Board, and was the President of CORS in 1966- 67. CORS is pleased to add Professor Coffman's name to the prestigious list of past recipients of the Larnder Prize (see: <http://www.cors.ca/en/prizes/index.php>). 



Ed Coffman

Did You Know?

The year 2011 is a prime number year, since 2011 is a prime number. People say, prime number years are the most enjoyable ones

The year 2011 represents the sum of the ages at time of death for 29 famous philosophers of the occident. While only those philosophers who lived before 1900 are considered, the selection is not free of arbitrariness, e.g., somebody may esteem Parmenides higher than Heraclitus or Spinoza higher than Pascal or Kierkegaard higher than Schopenhauer. Here is my list (age, name, year of birth and death, and contribution):

1. **80: Thales (ca. 625-545 BC)** is often considered the first Western philosopher, a Pre-Socratic philosopher, an enquirer into the nature.
2. **80: Pythagoras (580-500 BC)** put mathematics in the centre of his doctrine: "Everything is number!"
3. **61: Heraclitus (ca. 544-483 BC)**, philosopher of change, taught: "Nothing endures but change."
4. **70: Socrates (469-399 BC)** is considered the first "classic" of Greek philosophers, famous for his "maieutic" method to assist others in the birth of ideas (like a midwife).
5. **83: Hippocrates (ca. 460-377 BC)** is considered the father of scientific medicine.
6. **89: Democritus (460-371 BC)**, founder of the doctrine of atoms as the smallest particles of matter.
7. **80: Plato (427-347 BC)**, scholar of Socrates, founder of the doctrine of "ideas" of which existing things are imperfect copies.
8. **62: Aristotle (384/3-322/1 BC)**, scholar of Plato, founder of scientific philosophy.
9. **71: Epicurus (342/1-271/0 BC)**, founder of a philosophy of happiness (and absence of disease).
10. **72: Zeno (of Citium, ca. 336-264 BC)** was the founder of the Stoic philosophy. He met with his disciples in the "Stoa Poikile", a painted porch, where he taught; the origin of the name.
11. **63: Cicero (Rome, 106-43 BC)**, Roman politician, orator and stoic philosopher.
12. **69: Seneca (Rome, 4 BC-65)**, Roman statesman and important stoic philosopher.
13. **88: Epictetus (Rome, ca. 50-138)**, slave and stoic philosopher.
14. **59: Marcus Aurelius (121-180)**, Roman emperor and stoic philosopher.
15. **65: Plotinus (Alexandria/Rome, 205-270)**, philosopher of Neo-Platonism.
16. **76: Augustinus (Carthago, 354-430)**, influential church disciple and

"Patristic" Christian philosopher.
17. **49: Thomas Aquinas (ca.1225-1274)**, important "Scholastic" Christian philosopher, re-discoverer of the doctrines of Aristotle, influenced the Christian philosophy fundamentally; forerunner of the renaissance.

18. **65: Francis Bacon (England, 1561-1626)**, founder of British empiricism: "Knowledge itself is power".
19. **91: Thomas Hobbes (England, 1588-1679)**, English statesman and philosopher of state organisation, s. a. "Leviathan".
20. **54: René Descartes (1596-1650)**, French philosopher, mathematician and scientist; rationalism.
21. **39: Blaise Pascal (1623-1662)**, French philosopher, mathematician, founder of probability theory.
22. **72: John Locke (1632-1704)**, English philosopher, empiricist; separation of legislative and executive.
23. **70: Gottfried Wilhelm Leibniz (1646-1716)**, philosopher, physicist, mathematician, historian and diplomat; he created the binary number system.
24. **69: George Berkeley (1684-1753)**, Irish philosopher: „Esse est percipi“ ("To be is to be perceived").
25. **65: David Hume (1711-1776)**, Scottish philosopher, empiricist, such as Locke and Berkeley.
26. **80: Immanuel Kant (1724-1804)**, most important German philosopher; separation of knowledge "a priori" (Descartes' rationalism; "prior" to experience) and knowledge "a posteriori", (British empiricism; "after" the experience).
27. **61: Georg Wilhelm Friedrich Hegel (1770-1831)**, philosopher of German idealism; triadic dialectic: thesis – antithesis – synthesis.
28. **72: Arthur Schopenhauer (1788-1860)**, German philosopher of the will: "The World as Will and Idea".
29. **56: Friedrich Nietzsche (1844-1900)**, German philosopher: "The Will to Power", "Thus Spoke Zarathustra".

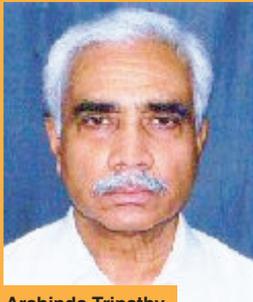
2011: Sum of the ages of the 29 philosophers

Contributed by: Heiner Muller Merbach, hmm@bior.de



Welcome to the OR for Development Section

Arabinda Tripathy, tripathy@iimahd.ernet.in



Arabinda Tripathy

It has been a long time since I edited the IFORS Developing Countries Committee newsletter. It was a very rewarding experience to share various ideas on the theme with our colleagues in the OR community. Hans Iltmann took over from me and did wonderful work in editing the newsletter (Direct Connection to Developing Countries) for many years. I have again been entrusted to carry on the work, this time, as editor of the IFORS News OR for Development Section. I gladly accepted the task to discharge this responsibility on an issue which has been very close to me.

As you may be aware, a major initiative with regard to operational research in development was taken after the first ICORD (International Conference on Operations Research for Development) was organised in 1992 at Ahmedabad. A document titled "Ahmedabad Declaration" was prepared based on the deliberations at the conference. This document highlighted various initiatives for employing operational research in development.

Ahmedabad Declaration also identified educational initiatives for encouraging Operational Research in Development. Theo Stewart at the University of Cape Town took a major initiative by establishing a Master's level programme i.e. M.Sc. in Operational Research in Development. I was also involved in designing and launching this programme. Theo made great efforts in managing this programme for about five years. However, support had not been forthcoming to the extent desired and thus may be facing closure. Those who wish to share their ideas and suggestions to this lamentable situation are welcome to contact the following:

Prof. Theo Stewart (theodor.stewart@uct.ac.za)

Professor Emeritus
Department of Statistical Sciences
University of Cape Town
7701 Rondebosch
South Africa

Prof. Arabinda Tripathy (tripathy@iimahd.ernet.in)

Dean, Vinod Gupta School of Management
Indian Institute of Technology, Kharagpur
Kharagpur-721 302, India

You will find in this section a note on the program prepared by Theo Stewart.

As you are aware, the IFORS Prize for OR in Development will be awarded this July during the IFORS 2011 in Melbourne. IFORS Prize Chair Subhash Datta here provides more information about the competition, along with the papers which had been selected among the finalists.

I look forward to your continuous support and participation in this forum. I also hope to communicate with you more frequently in the coming months. 🌐

MSc Programme on Operational Research in Development at the University of Cape Town

Theo Stewart, theodor.stewart@uct.ac.za



Theo Stewart

From 2005 to 2010, the Department of Statistical Sciences at the University of Cape Town (UCT) in South Africa ran a near-unique programme on operational research in development (ORD). Although the programme is currently suspended as the numbers of students did not meet the university's requirements, there is no doubt that the graduates over this time developed a strong and mature sense of the role of ORD. Dissertations dealt (inter alia) with poverty in the Western Cape province, the establishment and operation of a food banking system and informal retail outlets in shanty towns, as well as public health issues.

The conventional MSc at UCT is research-based, with evaluation based on a dissertation completed over 18 months to 2 years of study, and without formal coursework. The ORD programme deviated from this norm by instituting an intensive course-work and seminar curriculum over 9 months, followed by a dissertation which was required by UCT rules to constitute 50% of the requirements of the degree, typically taking 9 to 12 months to complete.



The coursework component was developed in collaboration with Arabinda Tripathy. The core modules within this component were cases and readings in ORD (weekly discussion and seminar sessions, working through core literature from the origins of OR through to the present, with an emphasis on ORD), basic OR techniques, problem structuring methods, decision modelling (multicriteria decision analysis and cognitive biases), project management, analysis of survey data and spatial statistics. Electives taken by some students included economics for development, financial markets, multivariate statistics and time series. The intention was to provide a rich interplay between "soft" and "hard" OR methods, integrated through the cases and readings in the context of ORD. The dissertations to a large extent also blended the hard and soft elements in addressing very real problems in South Africa.

A total of 8 students passed through this programme, and all emerged with a burning zeal to apply OR in development. We are still hopeful that there may again emerge enough of a demand to restart the programme. 🌐





Subhash Datta

Since its introduction at the 1987 IFORS conference, the IFORS Prize for OR in Development has undergone many changes. Notwithstanding feature changes from the original "Third World Prize", the competition has consistently been the IFORS vehicle for bringing out and recognizing outstanding Operations Research applications which were conducted to assist organizations in their decision-making processes in the areas of education, health, water, technology, resource use (physical or financial), infrastructure, agricultural/industrialization, environmental sustainability, and which possess original features in methodology or implementation for development in developing countries. Changes implemented to make the Prize better are proof of the continuing commitment of IFORS towards encouraging the use of OR in countries and places that can benefit most from the discipline.

The 2011 Prize will be awarded during the 19th Triennial conference on "Global Economy and Sustainable Environment" to be held in Melbourne, Australia from 10-15 July 2011. This year's competition features an increase in the Prize and removes the previous limitation that authors must be nationals of developing countries.

A total of 24 entries were received, with 2 entries disqualified for not following submission instructions (specified as article submissions to the IFORS Journal, International Transactions on Operational Research). The papers were from 15 different countries, with each one describing a practical OR application in a developing country context. A stress on development issues was an important factor in the judging process. Papers of a pure technical nature, or those which have no relevance in the development context were not considered.

The panel of judges for the 2011 competition comprises of 8 Jury members: 2 each from Asia, Africa, Latin America and Europe.

All the Jury members went through the 22 qualified entries and selected the 8 finalists who are required to present their papers on the first day of the Melbourne conference. The criteria for the preliminary round consist of: Problem Definition, Creativity, Appropriateness, OR Content, Structure and Organisation of the Paper, Stress on Development and Actual/Potential impact of the study.

Table 1 on the number of papers submitted by country of origin shows the number coming from Latin America,

Country	Number of Articles
Mexico	3
Brazil	3
Iran	3
China	3
Chile	2
Colombia	1
Bolivia	1
India	1
Sri Lanka	1
Algeria	1
Morocco	1
Japan	1
France	1
Spain	1

Table 1. Submissions by Country

OR methodologies used, as presented in Table 2, indicate that Multi Criteria Decision Analysis was the most used in the papers, followed by Simulation, DSS and Data Envelopment Analysis..

Methodology	Number of Articles
MCDA	5
Simulation	4
DSS	4
DEA	4
LP/ILP	3
Network	2
AHP	2
NLP	1
Forecasting	1
Scheduling	1
Stochastic Optimization	1

Table 2. OR Methodologies Applied

* Some of the papers used multiple methodologies

On the basis of the selected criteria, all 8 jury members converged on the following 8 papers as shown in Table 3.

Country	Area	Methodology Used
Algeria	Water	MCDA/ILP
China	Mobile Network	Network Optimization
Mexico	Regional Development	DSS/ MCDA
Chile	Location of Schools	ILP
Sri Lanka	Health Manpower Planning	Simulation
Brazil	Biodiesel Supply Chain Management	Stochastic Optimization
Bolivia	Education	DEA/ DSS
Argentina	Infant Mortality (Water/Sanitation)	DEA/ Simulation

Table 3. SELECTED PAPERS (Finalists)

The authors whose papers are selected for the final round had been invited to present them at the conference in Melbourne. After their final oral presentations the panel will select the winning paper to be awarded US\$ 4000 as well as the runner-up who will receive US\$ 2000. The awards will be announced during the Conference banquet.

Titles of the papers with abstracts and authors that were initially selected are given in this IFORS News issue. However, finalists who cannot be present at the Conference will be disqualified with their slots offered to the next qualified entry or entries. 





PAPER #
11

Cost Efficient Equitable Water Distribution in Algeria: A Bi-criteria Fair Division Problem with Network Constraints

Udías, Angel Luis; Rey Juan Carlos University, Statistics and Operations Research **Ríos Insua, David**; Royal Academic of Sciences **CANO, JAVIER**; REY JUAN CARLOS UNIVERSITY, STATISTICS AND OPERATIONS RESEARCH **FELLAG, HOCINE**; Université Mouloud Mammeri, Mathematics

Abstract: We describe a complex water distribution problem as a bi-criteria fair division problem over time with network constraints: we aim at distributing water fairly in a reliable and cost-efficient manner. The problem involves both the optimization of the pump operational schedules, as well as strategic planning. Complex rules establish energy fares depending on the daytime and the contractual issues of the pump facility. The problem is illustrated for the region of Kabylia, Algeria. We discuss the relevance and implementation of different solution concepts in this context, showing various alternatives which improve upon current management procedures..



Hocine Fellag Javier Cano



David Rios Insua Angel Udias



PAPER #
111

High Precision Coverage Optimization Models and Algorithms for GSM and TD-SCDMA Networks

Guo, Tiande; Graduate University of Chinese Academy of Sciences, School of Mathematical Sciences **Gao, Suixiang**; Graduate University of Chinese Academy of Sciences, School of Mathematical Sciences **Zhao, Tong**; Graduate University of Chinese Academy of Sciences, School of Mathematical Sciences **Chen, Ge Jiang, Zhipeng Sun, Jing Wu, Gepeng Han, Congying Wang, Shenna Zhang, Wei Kong, Ruiyuan**

Abstract: The existing network resources of GSM and TD-SCDMA have been in short supply with the increasing number of the cell-phone users in China. In this paper, optimization models of GSM and TD-SCDMA networks are proposed to enhance resource utilization and improve the QoS. First, a new adaptive propagation model and a traffic matching model are proposed to obtain a high-precision coverage and a high-precision traffic map respectively. Based on the above work, we present a multi-objective optimization model for advancing the QoS of the communication network by adjusting the parameters of the antennas. In addition, we establish another optimization model for the addition of new base stations (BSs). Finally, a Single Instruction Multiple Threads Pattern Search Algorithm (SIMT-PS) based on the Graphic Processing Unit (GPU) is presented to solve the models. The applications in Beijing and Guangzhou have achieved great improvements of QoS and reduced the cost of communication system operation.



Jing Sun Wei Zhang Congying Han



Tong Zhao Zhipeng Jiang Ruiyuan Kong



Suixiang Gao Ge Chen Shenna Wang



Tiande Guo Gepeng Wu





PAPER #
112

CORE: A DECISION SUPPORT SYSTEM FOR COMPETITIVENESS ANALYSIS OF MEXICAN REGIONS

Navarro, Jorge; AUTONOMOUS UNIVERSITY OF SINALOA, Informatica; CENTER OF SCIENCES OF SINALOA, Research and Development **Duarte, Alfonso;** University of Occidente **Fernandez, Eduardo;** AUTONOMOUS UNIVERSITY OF SINALOA **Ibarra, Guillermo;** AUTONOMOUS UNIVERSITY OF SINALOA

Abstract: If regional competitiveness is equated to the capacity to attract and preserve investments, then the perception investors have of the region's characteristic is fundamental. This perception is a result of a complex integration of multiple criteria. This paper approaches the analysis of regional competitiveness by techniques of multi-criteria sorting. An ELECTRE-inspired preference model is used in the framework of the new THESEUS multi-criteria evaluation method for making competitiveness assignments. The model's parameters are inferred from a set of assignment examples. This model is implemented in the CORE decision support system, which satisfies a requirement of Sinaloa State Government in Mexico. CORE performs very well analyzing the competitiveness of Mexican regional entities. This will allow governments to better define their policies by placing financial resources more efficiently. The model and the system are conceived to easily emigrate towards other regional contexts.

Alfonso Duarte



Jorge Navarro

Eduardo Fernandez



PAPER #
124

Optimizing Location and Size of Rural Schools in Chile

Marianov, Vladimir; Pontificia Universidad Católica de Chile, Electrical Engineering **Araya, Fernando;** Universidad de Chile, Graduate program, College of Physical Sciences and Mathematics **Dell, Robert;** Naval Postgraduate School, Operations Research Department **Donoso, Pedro;** Universidad de Chile, Civil Engineering **Martínez, Francisco;** Universidad de Chile, Civil Engineering **Weintraub, Andres;** University of Chile, Industrial Engineering

Abstract: The Chilean Ministry of Education oversees preschool, primary, and secondary education in both urban and rural areas. Many parts of Chile are sparsely populated and there are currently over 4,000 rural schools (almost 38% of all schools in Chile) educating 9.5% of the students in the country. Many of the rural schools are small with only one teacher responsible for instruction of all local students (multi-grade schools). The geographical distribution of the rural schools has not been coordinated and this has resulted in unequal utilization of existing schools and some unreasonably long student travel times. Good management of the rural schools is fundamental to meeting Chile's goal of providing quality education to its citizens. Seeking to improve the situation, the Ministry of Education ordered a study of the optimal location and size of rural schools with the general goals of reducing the number of lesser quality multi-grade schools and reducing student travel times while maintaining reasonable costs. This paper presents results of this study obtained using an integer linear program that has been imbedded in a geographical information system. We present computational results for the entire country. Recommendations include where to open new rural schools as well as where to expand, reduce, close or leave unchanged existing schools. We show how recommendations are sensitive to key parameters such as the cost of transportation.



Vladimir Marianov Andres Weintraub



Fernando Araya Francisco Martínez



Pedro Donoso Robert Dell




 PAPER #
125

Using System Dynamics to address dental workforce issues in Sri Lanka: a practical approach in a developing country

De Silva, Dileep; Ministry of Health, Health; University of Southampton, School of Management **Brailsford, Sally**; University of Southampton UK, School of Management

Abstract: Sri Lanka is a developing South Asian country where education and health are free for all its citizens. Country's Dental Health policies had failed to achieve their intended result because of the complexity of Oral health, dental health services and the dental health policy-making process; leading to "unemployment" of dental surgeons amidst the need for more dental health professionals for country's health development. In this article, we review a novel method of collecting information from dental surgeons and the benefits of using system dynamics (SD) model to address Dental Health workforce issues. The illustrations show how SD modelling and simulation yield realistic, practical and insightful lessons for policy making stemming from the endogenous and aggregate perspectives. The Government of Sri Lanka having accepted the results of this study has increased the employment opportunities for dental surgeons to optimize the dental human resource utilization to match the country's development.

Prof. Sally Brailford


 Dr Jayasundara
 Bandara


Dr Dileep De Silva


 PAPER #
127

DEALING WITH UNCERTANTIES IN THE BIODIESEL SUPPLY CHAIN BASED ON SMALL FARMERS: A ROBUST APPROACH

Leão, Raphael; PETROBRAS Oliveira, Fabrício; PUC-Rio, Engenharia Industrial hamacher, silvio; PUC-Rio, Industrial Engineering

Abstract: The strategy adopted by the Brazilian Biodiesel Program is to base its fuel production on grains acquired from small, family-owned farms in the poorest regions of the country, thereby fostering social inclusion and transfer of income. The success of the program depends on the development of a robust supply chain logistic structure, appropriate distribution of crop production, and investments in new grain crushing units. This article presents the development of mathematical models for optimizing the production arrangements for the supply of a biodiesel plant sourced from family farms, taking into account agricultural, logistic and industrial aspects, and the uncertainties inherent to the process. Three different approaches are proposed in order to deal with the problem stochasticity and cope with the investor's risk tolerance profile. The models were successfully applied to a case study for the production chain for biodiesel fuel from castor oil in the semi-arid region of Brazil.



Raphael Leão



PAPER #
130

A Decision Support Methodology for Increasing School Efficiency in Bolivia's Low-income Communities

Figueiredo, Joao; Saint Joseph's University, Management Marca **Barrientos, Miguel;** Fe y Alegría Bolivia, Coordinacion Educacion Formal

Abstract: This paper presents a DEA-based decision-support methodology that has been implemented and is being used by a not-for-profit organization, Fe y Alegría, which runs 439 Bolivian schools reaching over 160,000 disadvantaged students in that poverty-stricken Latin American nation. Bolivia is a poor country with the highest percentage of indigenous population and the lowest per capita income in South America and as such its inhabitants are in dire need of effective educational resources to help them out of poverty. The DEA-based methodology described in this paper has offered an objective way to compare network schools among themselves and with out-of-network schools, providing a deeper understanding of school efficiency levels in the face of scarce resources, and allowing for sharing of best practices across the network. The paper introduces the educational environment in Bolivia, presents the DEA model, describes the decision support methodology, and provides two examples of its use. The first example compares FyA secondary schools with out-of-network secondary schools using publicly available data, and the second compares FyA secondary schools among themselves using a proprietary data-base. The paper also comments on lessons learned and the need for broad consensus-building and organization-wide buy-in for successful adoption and maximum impact.



PAPER #
138

Efficiency in Saving Infant Lives: the Influence of Water and Sanitation Coverage

Ferro, Gustavo; UADE and CONICET, Instituto de Economía Romero, Carlos; UADE, Instituto de Economía Castiglione, Ignacio; UADE

Abstract: In this paper, we aim to assess the relationship between water and sanitation coverage and saved infant lives. Our hypothesis is that extended coverage implies measurable results in terms of reduced infant mortality. Moreover, we suspect that with the same resources, ceteris paribus, different countries can achieve better or worst results depending on the efficiency which the resources are used. We explore the policy consequences, simulating the effects that improvements in efficiency can yield in terms of the reduction in child mortality. Our approach is first to explore with a database of Latin American countries the "production function" of survivor infants on 1,000 births. Once we identify the causal relationship with an econometric model, we estimate a production frontier with Data Envelopment Analysis in order to determine the best performers: countries which can do better with the same "inputs". Finally, we simulate the consequence of catching up to the frontier in each country. The impressive quantitative results are interesting for policy concerns, since efficiency is reconciled with equity (in the sense that the winners of the coverage increases and the health improvements are the poorer).



Gustavo Ferro



Search for IFORS- EURO Scholars to the ESI 2012: EURO Summer Institute on "Maritime Logistics" Bremen, Germany | June 3 – 15, 2012



Martine Labbé

The office of the IFORS EURO Vice President is pleased to announce the sponsorship of two participants to join the EURO Summer Institute (ESI) on "Maritime Logistics (ESI 2012)" to be held in Bremen, Germany June 3 – 15, 2012. The Euro Summer and Winter Institutes (ESWI) are organized to encourage good social and working relationships among promising young OR scientists in Europe.

The selected IFORS- EURO scholars will receive joint sponsorship from IFORS and EURO. IFORS will sponsor the travel costs of two delegates coming from non-EURO member societies. Applicants from developing countries will be given preferential treatment for one of the two slots. On the other hand, EURO will shoulder expenses related to the registration, accommodation, meals, and social activities to the two IFORS fellows.

The ESIs and EWIs aim to facilitate the establishment of a network of promising young (with less than 10 years experience in OR) researchers, thereby encouraging future collaborative work. The Institute seeks to involve 20-25 participants. While featuring lectures by invited speakers, the participants are expected to present and discuss their papers. A special issue of an international journal will be produced, based on the papers presented during the ESWI. The varied social program prepared for the participants is one of the unique features that enhance the learning activities.

For more details about ESI 2012,
go to <http://prodlog.wiwi.uni-halle.de/ESI2012>

Applications for the IFORS Fellowships:

If you:

1. are either a PhD student or possess less than two years research experience since completing a PhD;
2. possess significant experience in maritime logistics;
3. have authored an original (has not yet appeared in any journal) paper along the lines of the ESI 2012; and
4. are able to present your work and answer questions in English, you may be the person we are looking for.

Selected candidates will be required to submit to IFORS a report of their participation. If you think you qualify, submit your curriculum vitae, your proposed paper (or at least a two-page abstract of this work) and a letter of recommendation from one referee (preferably your thesis advisor or head of department) by October 1, 2011 to:

Professor Martine Labbé

IFORS Vice President for EURO
Université Libre de Bruxelles, Bd du triomphe
Département d'Informatique CP 210/01
1050 Brussels BELGIUM
Email: mllabbe@ulb.ac.be
Fax: + 322 650 5970

Important dates

Deadline for submission of applications: December 1st, 2011

Notification of acceptance: February 1, 2011 

IFORS Education Resources Web-Based Project

Needs Volunteers

Launched late last year, the IFORS Education Resources Web-Based Project aims to address the challenge of providing access to ORMS educational materials worldwide through a central "clearinghouse" in the IFORS website. It hopes to be able to provide OR workers with meaningful materials in response to their queries on any OR subject matter. While initially intended to put together whatever is available in the web, it also aims to actively solicit and bring together the work of Operations Researchers around the world. It takes advantage of its access to the international network of societies included in the IFORS membership, in much the same way that IFORS has continued to provide OR professionals with a source of all OR works ever published through its International Abstracts in Operations Research (IAOR).

Background

More than ten years ago, the Educational Resources Committee built a static website that listed materials available at that time. The fact that the search engine needed to be developed was an obstacle that the project encountered.

In 2007, the IFORS Website was redesigned. It retained the Educational Resources section (http://ifors.org/education_resources/), which at the start contained dead links from the original efforts. It has since been updated to remove dead links, but no new material has so far been added.

The Project

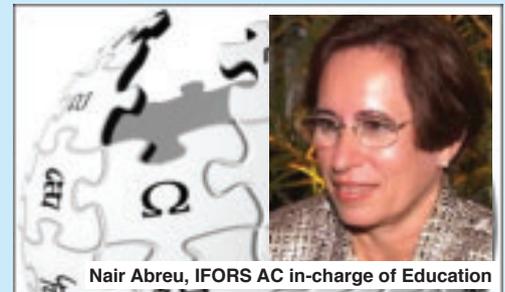
Technology has progressed and has made open source web applications such as the wiki available for use. Thus, the remaining problem is populating the Educational Resources section with meaningful materials, which is envisioned to include OR materials in various languages.

Where do you fit in?

If you believe you can provide relevant OR links for posting in the Educational Resources website and want more details, please email any of the following individuals:

- **Marcela Araya (chair), Chile, representing ALIO** mgonzalez@utalca.cl
- **Samuel Jurkiewicz (co-chair), Brazil, representing ALIO**, jurki@pep.ufrj.br
- **James Cochran, USA, representing NORAM**, jcochran@cab.latech.edu
- **Xiwen, from China, China, representing APORS**, xwlu@ecust.edu.cn
- **Gerhard-Wilhelm Weber, representing EURO**, gweber@metu.edu.tr

These Committee members are responsible for screening contributions. Submissions may also be sent to the IFORS webmaster, webmaster@ifors.org 



Nair Abreu, IFORS AC in-charge of Education