

ASOR News — October-November 2013

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This bigger-than-usual newsletter covers two months, October 2013 and November 2013. Sorry, we missed releasing a newsletter in October on account of being a bit too busy!

**Energy Modelling Workshop  
– 26 November**

The Australian Society of Operations Research, Melbourne chapter, with assistance from CSIRO and U. Newcastle, is pleased to announce a half-day workshop on Energy Modelling and OR, to be held from **1.30pm to 5.30pm on 26 November 2013 at RMIT and U. Newcastle, by Access Grid.**

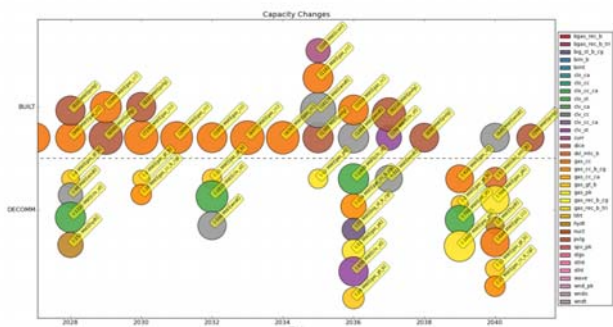
Registration is free and theme of the workshop is *energy modelling and its relationship to Operations Research as a scientific discipline.*

The workshop will have three keynote presentations, one each on the topics of renewable supply modelling, energy futures modelling and demand modelling.

**Mark Barrett** from University College London will present on novel approaches to demand modelling in the UK, and on the other activities undertaken within the UCL Energy Institute (<http://www.ucl.ac.uk/energy/>).

**Tim Forcey** from the Melbourne Energy Institute (<http://www.energy.unimelb.edu.au/>) will present on the work being undertaken at MEI and other R&D he has been associated with in his career, with a particular emphasis on renewable supply and storage.

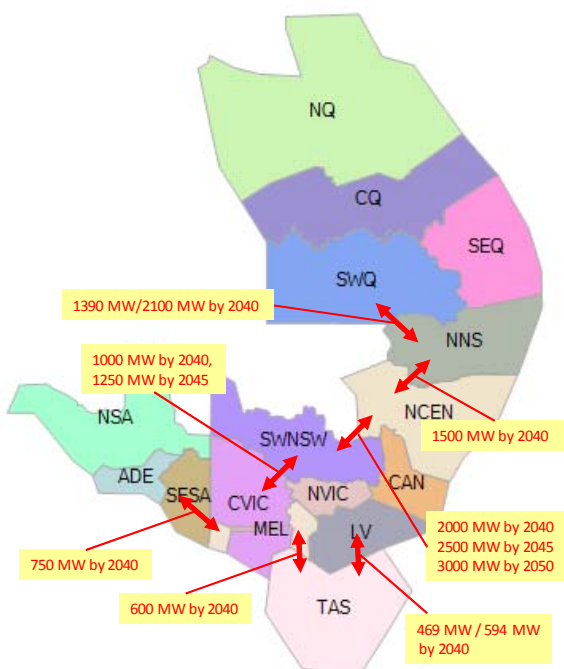
**Paul Graham** from CSIRO in Newcastle will present on the quantitative modelling used within the recently-completed Future Grid Forum (<http://www.csiro.au/future-grid-forum>) hosted by CSIRO and involving around 40 stakeholders from the Australian stationary energy sector and its community of customers.



In addition to the keynotes we have an open call for presentations from OR students, researchers and practitioners, which can be delivered from either Melbourne (RMIT) or U. Newcastle. To reinforce the concept of a workshop, these contributed

presentations will be 10 minutes long with a further 10 minutes scheduled for questions and discussion after each presentation. We strongly encourage you to present research which is incomplete/underway, related to PhD research, and/or which might even be only in the early stages of planning or commencement.

As at 14 November, we have four of these contributed talks already accepted (from researchers at RMIT, WorleyParsons, CSIRO and U. Newcastle)



Proposals for presentations will be accepted up until Thursday 21 November. While non-presenters are permitted simply roll up on the day, we are providing some catering and so would much prefer it if you would register your interest to attend.

Please send all proposals to present, and registrations of interest, to [Simon.Dunstall@csiro.au](mailto:Simon.Dunstall@csiro.au).

## Health Modelling Workshop – February 2014

Leonid Churilov has planning underway for a Health Systems Modelling workshop on Mon 24-Tue 25 Feb. The guest speakers (at this stage) include:

**Prof Sally Brailsford**, U. Southampton, UK  
(<http://www.southampton.ac.uk/management/about/staff/scb.page>);

**Dr Geoff McDonnell**, UNSW,  
(<http://www.aihi.unsw.edu.au/people/dr-geoff-McDonnell>);

**Dr Andrei Borshchev**, CEO Anylogic Company,  
([http://www.anylogic.com/blog?page=post&blog=blog\\_EN&id=98](http://www.anylogic.com/blog?page=post&blog=blog_EN&id=98));

A healthy mix of other modelling, clinical, and health management research speakers is expected. Preliminary discussions indicate that there would be some interest not only from the research end of the spectrum, but also from Victorian and interstate health care managers.

The Florey Institute is hosting the event by providing the venue at Parkville campus Melbourne Brain Centre. The event will also be supported by ASOR and further details will be available in the December ASOR Melbourne newsletter.

## MODSIM/ASOR 2013 Conference Update

**ASOR AGM.** The National ASOR Annual General Meeting will be held at MODSIM/ASOR on Monday 2<sup>nd</sup> December at 4pm. **Contact the ASOR Melbourne committee if you wish to propose agenda/discussion items for this AGM.** If you are in Adelaide, permanently or just for MODSIM, then please do attend the AGM!

**Conference Program.** The MODSIM conference program has now been published on the conference website and this includes full details on the ASOR streams.

**Student Prizes.** As is usual for an ASOR conference, we will be awarding student prize(s) for presenting student authors. Keep a look out for information on these prizes at the conference.

## Upcoming OR Seminars

### ASOR Melbourne Series

**Due to the Energy Modelling Workshop and ASOR/MODSIM in November, there is no regular ASOR seminar scheduled.**

### CSIRO and Monash Clayton

**26 November 2013, 11.30pm-12.30pm**, CSIRO Computational Informatics, Building 307 Room B107, Clayton Campus (via Eastern Reception).

**Dr Marta Szachniuk**, Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poznan Poland. *The orderly colored longest path problem and its applications.*

**27 November 2013, time TBA**, CSIRO / Monash Uni Clayton Campus. **Prof Jacek Blazewicz**, Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poznan Poland. *Internet Shopping Optimization Problem - new algorithms.*

See details following, and contact [Asef.Nazari@csiro.au](mailto:Asef.Nazari@csiro.au) for further information.

### Opt and OR in Melbourne Seminar Series

**Friday 15 November, 3:00-4:00pm**, NICTA Seminar Room 5.07, Level 5, Doug McDonnell Building, U. Melbourne. **Professor Brian Williams** (MIT, NICTA). *Sustainability and Optimization: Solving Stochastic Optimization Problems with Bounded Risk Through Risk Allocation.*

For more information about these events, visit <http://www.or.ms.unimelb.edu.au/>

### AMSI/ANZIAM AGR National Seminars

For information about these events, visit <http://www.amsi.org.au/index.php/research-a-higher-education-mainmenu/access-grid/national-seminar-series>.

## CSIRO/Monash Seminars - 26 and 27 November 2013

On 26 and 27 November CSIRO has arranged for two OR talks to be presented in the CSIRO/Monash Clayton precinct.

**November 26, 11am, CSIRO Clayton and interstate sites by Video Conferencing** (please contact Asef Nazari for details). All welcome!

**Dr Marta Szachniuk**, Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poznan Poland.

*The orderly colored longest path problem and its applications.*

Abstract: Let  $G = (V,E)$  be a graph whose edges have been colored with  $c$  colors. An orderly colored path (OCLP) in  $G$  is a path whose edges always follow the

same cyclic sequence of colors. If  $c=2$  the path is called alternating. When  $c > 2$ , a properly colored path in  $G$  is a path in which any two consecutive edges have different colors. Finding a properly edge-colored path has been also proved NP-hard. The same concerns the problem of finding an alternating path in  $c$ -edge-colored graphs.

The concept of  $c$ -edge-colored graphs can be used to represent various problems of the real life, from scheduling to tracing molecular interactions. The latter issue, in particular an analysis of experimental data recorded in NMR experiment and a reconstruction of specific pathways in the NMR maps, has been the motivation to study the OCLP and develop the integer programming models for the considered problem.

In the presentation we recall the definition of the orderly colored path problem and we show example problem(s) that can be represented as OCLP.

Next, we consider alternative integer programming formulations for the problem and we evaluate their performance using a mixed integer solver supplemented with a Branch & Cut procedure for cycle separation.

*Marta Szachniuk has a M.Sc. in computing science (1998) and in mathematics (1999), Ph.D. in computational biology in 2005, is a professor of bioinformatics and computational biology at the Institute of Bioorganic Chemistry PAS. Her research interests include modelling combinatorial problems derived from molecular biology, database and algorithm design for structural bioinformatics, concerning especially RNA molecules. She has published her results in the outstanding journals, among others in Journal of Computational Biology, Bioinformatics, and Nucleic Acids Research. Dr. Szachniuk is also a vice-president of the Polish Bioinformatics Society and a member of the Managing Board of the EURO Working Group on Operations Research in Computational Biology, Bioinformatics and Medicine. In 2006 she was awarded EURO Doctoral Dissertation Award for the best doctoral dissertation presented in Europe in the field of Operations Research.*

## 27 November, Venue and Time TBA

**Prof Jacek Blazewicz**, Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poznan Poland.

*Internet Shopping Optimization Problem - new algorithms.*

Abstract: In the talk we study an optimization aspect of Internet shopping with price sensitive discounts from customer's perspective (which is a specific case of the Internet Shopping Optimization Problem). We developed and experimentally tested a simple greedy algorithm for ISOP. In this algorithm products are considered in a certain order.

Computer experiments, where solutions obtained by the algorithm were compared against optimal solutions and those provided by the internet algorithm of Price Comparison Sites, were performed on the basis of data from the online book industry.

Solutions found by the greedy algorithm were on average 4.1% more expensive than the optimal solutions and were 36.1% cheaper than solutions provided by Price Comparison Sites without taking delivery prices into account.

New algorithms, taking into account the specificity of the problem, are presented as well and further extensions and generalizations are also mentioned.

*Prof. Jacek Blazewicz, a M.Sc. in control engineering 1974, Ph.D. and Dr. habil. in computer science in 1977 and 1980, respectively, is a professor of computer science at the Poznan University of Technology. Presently he is a deputy director of the Institute of Computing Science. His research interests include algorithm design and complexity analysis of algorithms, especially in bioinformatics, as well as in scheduling theory. He has published widely in the above fields (over 330 papers) in many outstanding journals, among others in IEEE Trans. on Computers, IEEE Trans. on Communications, Discrete Applied Mathematics, Parallel Computing, Acta Informatica, Performance Evaluation, Journal of Computational Biology, Bioinformatics, Computer Applications in Biosciences, Operations Research, Int. Transactions of Operations Research, European Journal of Operational Research, Information Processing Letters, Operations Research Letters, IEEE Trans. on Comp. Biology and Bioinformatics,*

*Journal of Heuristics, Annals of OR. He is also the author and co-author of fourteen monographs. Dr. Blazewicz is also an editor of the International Series of Handbooks in Information Systems (Springer Verlag) as well as a member of the Editorial Boards of 10 scientific journals. His science citation index exceeds 2650, while h-index = 25. In 1991 he was awarded EURO Gold Medal for his scientific achievements in the area of operations research. In 2002 he was elected for the Membership of the Polish Academy of Sciences. In 2006 he was awarded a Dr.H.C. degree from the University of Siegen.*

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## Postgrad and Postdoc News

Compiled by Cam MacRae

**Ming-Fang Ding** (RMIT) had her completion seminar on 3 Oct, 2013. The presentation was titled New Development of the Inclusive-cone-based Method for Linear Optimization.

In Newcastle, **Sebastian Ruther** has submitted his PhD thesis, and is now completing the minor corrections needed by the examiners. **Mateus Rocha de Paula** and **Amir Salehipour** are new post-docs. **Alan Lee** (PhD student) reached the university finals for the 3 minute thesis competition, with his talk titled "A first mile shuttle", you can watch it here:

<http://www.youtube.com/watch?v=n9buel8ZQT8>

**Hadi Charkhgard** was a joint winner for best student talk at Recent Advances, and **Elias Temponi** (PhD student) has been visiting from the Universidade Federal de Minas Gerais, Brazil. Congratulations (and welcome) to all!

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## ORSNZ and NZSA Joint Conference

*Analytics for a Changing World: From Data to Decisions.* Sunday 24 November to Wednesday 27 November 2013, University of Waikato.

As part of the International Year of Statistics and Mathematics of Planet Earth 2013, the Operations Research Society of New Zealand (ORSNZ) and the New Zealand Statistical Association (NZSA) are holding a joint conference hosted by the University of Waikato in Hamilton.

This conference incorporates both the 47th Annual ORSNZ Conference and the 64th Annual NZSA

Conference. The conference will start with a welcome function on Sunday 24 November. The conference sessions will run from Monday 25 November to Wednesday 27 November, with a conference dinner on Tuesday 26 November.

The conference organisers would like to announce a call for papers in any and all practical and theoretical aspects of OR and Statistics. We are also particularly interested in submissions within the growing area of Analytics. Abstract submissions will close on 27 September.

The conference will welcome entrants for the ORSNZ Young Practitioner Prize (\$1000 in prize monies to distribute) and will also be supporting students through reduced conference fees and travel grants.

For more information and abstract submission instructions, please visit the conference website: <https://secure.orsnz.org.nz/conf47/>.

## Second International Optimisation Summer School

The 2nd International Summer School on Optimisation will take place in Kioloa, New South Wales, from 12th to 17th January 2014. The school is sponsored by the Optimisation Research Group of NICTA, and organized by Prof. Toby Walsh from NICTA.

The school will focus on solving large scale combinatorial optimisation problems in practice. The school is intended for PhD and Master students, and will include both introductory and advanced material.

Lecture topics covered include: introduction to constraint programming, modelling, integer programming, column generation, uncertainty, vehicle routing, scheduling, supply networks and research skills.

Lecturers include Phil Kilby, Pascal van Hentenryck, Martin Savelsbergh, Peter Stuckey, Simon Dunstall, Mark Wallace and Toby Walsh.

The registration page is open now and applicants will be considered as they are received. Visit <http://acpshcool.wufoo.com/forms/registration-form/>

Whilst you should register your details now, a registration fee will be required of all accepted participants towards the end of 2013.

The exact amount will depend on sponsorship being currently raised but will be less than US\$200. The registration cost will include all food and accommodation.

The School will again be held at ANU's beautiful seaside campus at Kioloa, near Bawley Point on the south coast of New South Wales.

## ASOR Ren Potts Medal and New Researcher Encouragement Award

These prestigious awards were instigated within ASOR many years ago, were regularly awarded in the past, but were unfortunately overlooked in 2011 and again in 2013. One of the issues that should be discussed at the AGM in Adelaide will be the restoration of these awards in future years.

### ASOR Ren Potts Medal

The Ren Potts Medal of the Australian Society for Operations research is intended to recognise individuals who have made outstanding contributions to theory or practice of OR in Australia. It is a national award restricted to Australian residents only.

Past Recipients:

2009	Professor Santosh Kumar, Melbourne
2007	Professor Pra Murthy, University of Queensland, and Professor Charles Pearce, University of Adelaide
2005	Professor Jerzy Filar, University of South Australia
1997	Dr Bruce Craven, University of Melbourne

### ASOR New Encouragement Award

The ASOR New Encouragement Award is intended to recognise new researchers who have completed a research degree at Master or PhD level in OR, or in a related field with significant contribution to the advancement of OR from any Australian university. Normally candidates will be considered who completed all requirements for their degree

between the two consecutive ASOR National conferences.

Past Recipients:

2009	Dr Shi Qiang Liu, Queensland University of Technology
2007	Dr Van Ha Do

## ASOR Melbourne email List

If you need to update your details for our mailing list, [melbourne-list@asor.org.au](mailto:melbourne-list@asor.org.au), visit the web page at [http://asor.org.au/mailman/listinfo/melbourne-list\\_asor.org.au](http://asor.org.au/mailman/listinfo/melbourne-list_asor.org.au), where you can maintain your information, subscribe or unsubscribe.

## ASOR Linked-In Group

Members who have accounts LinkedIn should visit <http://www.linkedin.com/groups/Australian-Society-Operations-Research-4473262>, which covers ASOR nationally.

## Membership

Are you a lapsed member but still on the ASOR mailing list? Please do stay on the list, but also strongly consider renewing your ASOR membership. Newly-redesigned membership forms are online at <http://www.asor.org.au/melbourne/membership.html>.

## Support for Visiting Researchers

Have you got an interstate or international visitor? ASOR Melbourne has committed funds to assist with the costs of visits, in exchange for visitors giving a seminar for the members. Contact your favourite committee member to discuss the opportunities.

## Summary of OR workshops and conferences in Australia

**MODSIM 2013 / ASOR 2013.** Adelaide Convention Centre, December 1-6, 2013. MODSIM 2013 incorporates DORS and the 2013 ASOR National Conference. <http://mssanz.org.au/modsim2013>

**2<sup>nd</sup> International Summer School on Optimisation**, Kioloa, New South Wales, 12-17

January 2014. <http://acpshcool.wufoo.com/forms/registration-form/>

The **4<sup>th</sup> Freight Logistics Optimisation Workshop (FLOW)**, on 10 February 2014, is a one-day course introducing optimisation to logistics practitioners in industry. Holiday Inn, Flinders Lane, City. FLOW is a joint initiative of CSIRO, ASOR and the Logistics Association of Australia.

## Web Pages of Interest

We are affiliated with FASTS through AMSC. To keep abreast of FASTS, see [www.usyd.edu.au/fast](http://www.usyd.edu.au/fast)s

ASOR National: [www.asor.org.au](http://www.asor.org.au)

ASOR Melbourne Chapter: <http://www.melbourne.asor.org.au/>

NZ OR Society <http://www.orsnz.org.nz/>

ORS (UK): <http://www.orsoc.org.uk/>

INFORMS (US): <http://www.informs.org/>

IFORS: <http://www.ifors.org>

Optimisation in Melbourne: <http://www.or.ms.unimelb.edu.au/>

For the latest international news, conference and jobs details see: <http://www.ifors.org/panorama/index.html>

tutOR: <http://www.tutor.ms.unimelb.edu.au>

## Committee Membership for 2013-2014

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