asor news

ASOR News — February 2014

Contents

Welcome to ASOR in 2014

ASOR Melbourne, which includes NSW and SA members, reached 106 members by the end of 2013. This is around double the size we were prior to the IFORS conference in 2011. We have "cracked the ton" for the first time in many years due to the efforts of a lot of people (the committee, seminar speakers, conference organising committees and so on) and a focus on giving members a good return for their subscription to ASOR and the time they invest in our events. Continuing success in 2014 will be based on keeping up the standard of our regular services (newsletter and seminars) and bringing more OR-oriented standalone events to members. The first such event for 2014 is the Health Systems Modelling workshop, to be held in Parkville over 24-26 February, in collaboration with a number of other organisations.

Health Modelling Workshops – February 2014

Two Health Systems Modelling Workshops are being held in Melbourne, 24-26 Feb 2014, and are co-sponsored by: Florey Institute of Neuroscience and Mental Health, CSIRO, ASOR, RMIT, Adaptive Care Systems and Anylogic.

Keynote speakers and presenters 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);

Assoc Professor Atte Meretoja, Helsinki University Central Hospital, Finland & Royal Melbourne Hospital, Australia (http://www.findanexpert.unimelb.edu.au/display/person448305).

The first workshop is entitled *Health Systems Modelling: Advances, Challenges, Opportunities* is on Monday 24 and Tuesday 25 February. The focus is on the use of conceptual, analytical, and computational modelling techniques for: health systems design, resource allocation, strategic, operational, and tactical planning of care systems and processes, health outcome evaluation, and medical decision making. It is being held in the The Auditorium, The Kenneth Myer Building, cnr

Genetics Lane and Royal Parade, University of Melbourne, Parkville.

The second workshop is entitled *Health Systems Modelling with AnyLogic* and is being held on Wednesday 26 February, at Room 66, Building 8, Level 9, RMIT University, City campus, 414-418 Swanston Street, Melbourne. The topic for this workshop is combining discrete-event, system dynamics, and agent-based simulation for multi-scale modelling of health systems

For information and registration please visit http://melbournebraincentre.edu.au/content/health-systems-modelling-workshops.

Biarri a Finalist for the 2014 Edelman Prize

Biarri and NBN Co have been selected as one of six global finalists for the prestigious **INFORMS Franz Edelman Award** which recognises excellence in applying advanced analytics to benefit business and humanitarian outcomes. Biarri and NBN Co have been selected for developing a unique OR-based approach for designing broadband networks. Biarri and NBN Co are only the second finalists ever from Australia.

INFORMS Franz Edelman finalist teams have contributed over $200 billion in benefits to business and the public interest. The 2014 INFORMS Franz Edelman Prize finalists were chosen after a rigorous review by accomplished verifiers from organisations such as IBM, BNSF, Bank of America, Verizon Wireless, HP, Eastman Chemical, Columbia University, Carnegie Mellon University, University of Chicago, the University of Chile. Finalists are chosen on the merits of how analytics methodologies were applied to solve problems, reduce costs, or otherwise improve results in real-world environments.

NBN Co and Biarri worked together to develop software (FOND) with an algorithmic engine that can quickly generate low cost broadband network designs. The mathematics allows NBN Co to design optimised (lowest cost) networks for any given network strategy or architecture (FFTH, FFTN, hybrid, etc). The mathematics has allowed NBN Co to reduce design effort by 80%.

The 2014 Edelman Prize winner will be announced at the Edelman Gala on March 31 during the INFORMS Conference on Business Analytics & Operations Research in Boston. Best wishes to Biarri from ASOR Melbourne!

For more information visit http://biarrinetworks.com/edelman2014.

ASOR and DSTO

David Marlow, Joint and Operations Analysis Division, DSTO Fishermans Bend

DSTO has ramped up its involvement with the ASOR Melbourne chapter in 2013. I joined the ASOR Melbourne committee earlier this year and am currently the sole DSTO representative on that committee. In April I gave a seminar at our AGM entitled "Fleet management OR in DSTO". This provided some insights into the type of OR that DSTO does in the fleet management space, with particular examples in patrol boat scheduling and naval helicopter fleet sizing and management.

We had plans to host a workshop on Defence Aviation Fleet Management involving the Royal Australian Air Force, DSTO and ASOR. The aim was for the RAAF to better understand the potential of OR for some of their day-to-day fleet management issues, and for the ASOR community to gain some insights into typical Defence fleet management problems. Unfortunately we had to put this workshop on hold for various reasons. We hope to re-visit this at some time in 2014.

In December, DSTO's annual Defence Operations Research Symposium (DORS) was jointly held with the ASOR conference and MODSIM 2013 in Adelaide. There were over 100 DSTO delegates at the conference. There were 22 talks presented at DORS. Moreover there were around 20 DSTO talks presented in the various ASOR conference sessions, including Logistics and Workforce Planning, Emerging Applications and Defence Applications. There were also 27 presentations across 3 sessions in the Defence and Homeland Security Modelling stream of MODSIM. All of these sessions were well attended, with many non-DSTO people present. DSTO's Chief Defence Scientist, Dr Alex Zelinsky, gave a plenary talk on the Monday afternoon of the conference entitled "The challenges of modelling and simulation for Defence and National Security".

Credit goes to all DSTO staff involved in organising and participating in the event, especially the outgoing ASOR National President, Dr Paul Gaertner and Vice-President (Administration), Dr Fred Bowden.

We look forward to continued engagement with the ASOR Melbourne chapter in 2014.

Recent Events

Energy Modelling Workshop
– 26 November 2013

ASOR, with assistance from CSIRO and U. Newcastle, ran a half-day workshop on Energy Modelling and OR on 26 November 2013 at RMIT and U. Newcastle, by Access Grid.

The three keynote presentations were from **Mark Barrett** (University College London, on novel approaches to demand modelling in the UK), Tim Forcey (Melbourne Energy Institute, on the work being undertaken at MEI and the AEMO 100% Renewables project) and Paul Graham (CSIRO, on the CSIRO Future Grid Forum).

In addition to the keynotes we had a series of presentations from OR students, researchers and practitioners. A dropbox containing the presentations from the day has recently been set up at https://www.dropbox.com/sh/1tahkp2yyabdf4a/ KDRzVY34oH, and while it is a little bare at present, this dropbox should be filled-up within a week or so.

MODSIM/ASOR/DORS Conference
– Adelaide 1-6 December 2013

The MODSIM/ASOR/DORS conference is now behind us, and what a successful event it was: especially for ASOR. Our thanks go to Paul and Fred (pictured) and other ASOR members who were on the organising and programme committees for the conference. One of the highlights for ASOR was the award of an MSSANZ Biennial Medals to Prof. Natashia Boland from U. Newcastle. Coincidentally, earlier in the week, Natashia was voted National President of ASOR. Other prize winners, for their presentations at MODSIM/ASOR/DORS were Riley Clement and Cam MacRae (see the *Postgrad and Postdoc News* section for details)

Paul Gaertner and Fred Bowden, President and Vice-President of ASOR in 2013, enjoying the MODSIM/ASOR conference dinner.

Natashia Boland, ASOR President for 2014, accepts the MSSANZ Biennial Medal at the MODSIM conference dinner.

Many of the ASOR papers took the form of refereed conference proceedings. For attendees that took the abstract-only option, or who can improve on their conference paper to create a journal article, then the ASOR Bulletin (http://www.asor.org.au/ publication/page.php?page=1) could be a great

place to publish your work. Members are always encouraged to publish material that is related to ASOR conferences to the ASOR Bulletin.

CSIRO and Monash University Seminars – Melbourne 26-27 November 2013

Dr Marta Szachniuk and Prof Jacek Blazewicz from the Institute of Bioorganic Chemistry, Polish Academy of Sciences, visited Melbourne in late November 2013 and presented a pair of seminars.

Dr Marta Szachniuk gave a presentation on the orderly colored longest path problem and its applications. In a graph with colored edges, the finding of the longest path whose edges follow the same cyclic sequence of colors is a NP-hard problem. She talked about the concept and related MIP model and solvers. Also, the application of this problem is discussed in scheduling and biological molecular interactions.

Prof Jacek Blazewicz gave a presentation on a new algorithm for nternet shopping optimization problem (ISOP). He discussed an optimization aspect of internet shopping with price sensitive discounts from customer's perspective. He presented the development of a simple greedy algorithm for ISOP where products are considered in a certain order.

Second International Optimisation Summer School – Kioloa 13-17 January 2014

The Second International Optimisation Summer School was held in Kioloa, New South Wales, from 13th to 17th January 2014. Once again, this was very competently organized by Prof. Toby Walsh from NICTA and was sponsored by NICTA. Lecture topics covered included: introduction to constraint programming, modelling, integer programming, column generation, uncertainty, vehicle routing, scheduling, supply networks and research skills. Presenters included Martin Savelsbergh (U. Newcastle), Peter Stuckey (U. Melbourne), Simon Dunstall (CSIRO) and Phil Kilby and Pascal van Hentendryk (NICTA). 46 OR/CP students and professionals attended, and according to Toby's post-workshop review, 44% of the students came from Australia, 28% from Europe (mostly Germany), 9% from N. America, and one or two students each from Malaysia, Egypt, Brazil and Bangladesh. According to the exit survey, the school was ranked "excellent" overall, with a median score of 1, and a mean of 1.27 on a 5 point scale, which is testament to the presenter quality and organisation of this popular event.

The 4th Freight Logistics Optimisation Workshop (FLOW)

The Logistics Association of Australia (LAA), ASOR and CSIRO held the fourth Freight Logistics Optimisation Workshop in Melbourne on 10 February. This was an industry-focussed event where optimisation methods and case-studies are discussed with an audience that is typically made up of logistics professionals who want to know more about "what's possible" and "what's in the box" when it comes to logistics, supply chain and optimisation. Presenters Martin Savelsbergh, Gaurav Singh, Simon Dunstall, Peter Carney, Mark Wallace and Asef Nazari did a sterling job in somewhat cramped conditions at the Holiday Inn in Flinders Street. We had initially planned for 15 participants and ended up with 27 bookings!

Over the course of the four workshops (starting in July 2011, and visiting Melbourne, Brisbane and Sydney) we have had over 80 attendees, many of whom will now know quite a bit more about OR and its applications than they used to. In time, we hope that this will help generate a bigger market for OR in Australia.

ASOR National AGM

The National ASOR Annual General Meeting was held at MODSIM/ASOR/DORS conference on Monday 2nd December at 4pm. The chief item of business was the election of a new national committee.

The full national committee for 2014 is:

President: Natashia Boland

Vice-President (Administration): Simon Dunstall

Vice-President (Education): Jerzy Filar

Vice-President (Membership and Public Relations): Simon Dunstall

Treasurer: Kaye Marion

Bulletin Editor: Paul Gaertner and Paul Corry

Web-Master: Andy Wong

Public Officer: Phil Kilby

APORS Representative: Erhan Kozan

IFORS Representative: Patrick Tobin

STA ("FAST") Representative: Natashia Boland

ASOR National Committee meetings will be held on the first Wednesday of the month, starting March 5.

Upcoming OR Seminars

ASOR Melbourne Series

19 February 2014, 6pm. Bruce Miller, Principal Consultant Power Systems, WorleyParsons. A simulation and analysis of the 5-state power system between Monday 13th to Friday 17th January. *Bruce will take us through the methods and results of some national electricity system simulation modelling and analysis that has been carried out by WorleyParsons and centred on the heatwave conditions earlier this year*. Room 8.9.66 at RMIT City Campus, and other sites by Access Grid Rooms.

26 February 2014, 6pm. Sally Brailsford, U. Southampton and VP European Soc. OR. Discrete-event simulation is alive and kicking! *At the 2010 UK OR Society Simulation Workshop, there was a lively panel discussion entitled "Discrete-event simulation is dead, long live agent-based simulation!" which was subsequently written up as a position paper for the Journal of Simulation. This talk continues that discussion and, to quote Mark Twain, argues that rumours of the death of DES are greatly exaggerated*. Room 8.9.66 at RMIT City Campus, and other sites by Access Grid Rooms.

Opt and OR in Melbourne Seminar Series

For 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.

Melbourne Energy Institute Seminars

Melbourne Energy Institute (MEI) hold regular seminars and these often will be of interest to OR people — this seems especially so given the turnout at our recent Energy Modelling workshop.

The next MEI seminar is: ***Energy Storage – What Scale? What Cost? What Impact?*** and is being held on Thursday, 27 February 2014, between 6pm and 8pm, at the Carrillo Gantner Theatre, Sidney Myer Asia Centre The University of Melbourne. Three speakers will be presenting — **Mr Tim Forcey** (Energy Advisor, Melbourne Energy Institute), **Mr John Wood** (CEO of Ecoult - developer and marketer of the CSIRO Ultrabattery) and **Mr Tosh Szatow** (Director and Co-Founder, Energy for the People). There will also be a panel discussion.

People can subscribe to future MEI event notifications via the links provided at http://www.energy.unimelb.edu.au (concentrate on the right hand side panel, down the bottom.

Postgrad and Postdoc News

Compiled by Cam MacRae

MODSIM/ASOR:

Riley Clement won an ASOR best student paper medal for his paper "*A variable sized bucket indexed formulation for nonpreemptive single machine scheduling problems*".

Cameron MacRae won a MSSANZ student paper commendation for his paper "*Controlling micro-CHP generators as a virtual power plant*".

Rachel Bunder, Hadi Charkhgard, Reena Kapoor, Simranjit Kaur, Alan Lee, Martijn Van der Merwe, Gabriel Makuei, Asef Nazari and Dhananjay Thiruvady all presented at MODSIM/ASOR.

INFORMS:

Mohsen Reisi presented at INFORMS in Minneapolis.

Milestones:

James Foster has submitted his PhD thesis for examination. Congratulations, James!

AMSI Summer Scholarships:

Undergrad **Patrick Anderson** is completing an AMSI summer scholarship working on the Hunter Valley Coal Chain.

Undergrad **Estefania Yap** is completing an AMSI summer scholarship working on multi-objective mixed integer programming.

International Interns and Visitors:

Masters student **Florian Stock**, from Berlin, has rejoined CSIRO's OR Group. Florian is building formulations and algorithms for finding supply chain waste diversion and material inputs substitutions. These will form part of an information and recommendation system for Industrial Ecology that is being built by CSIRO and four metropolitan councils, with funding from the Victorian Government.

Post-PhD Internships at CSIRO

CSIRO is offering several Post-PhD Internships within its Operations Research group at the CSIRO Clayton campus during 2014. These are twelve-week fully-paid assignments at CSIRO, for recently-completed PhD students who can work with CSIRO researchers to take partly-completed research (by CSIRO and/or the student) and generate completed and publishable research results.

Each applicant will be assigned a CSIRO OR group member who will help form the application for the position. The selection of candidates will be based on the alignment of research interests between the student and CSIRO's researchers. The student must have completed their thesis submission before commencing at CSIRO, and should not yet have had their PhD examination completed.

Register your interest by emailing Simon.Dunstall@csiro.au before 28 Feb 2014.

OR Employment

Lecturer/Senior Lecturer in Statistics/Operations Research at Victoria University of Wellington

Applications are invited for the position of Lecturer / Senior Lecturer in Statistics within the Statistics and Operations Research Group of the School of Mathematics, Statistics and Operations Research. The School seeks applications from candidates with a demonstrated record of excellence in research and teaching in any of area of statistics.

For enquiries contact Dr Peter Donelan, Head of School, on 04 463 5659 or peter.donelan @vuw.ac.nz. See also http://www.jobs.ac.uk/job/AIB853/lecturer-senior-lecturer-in-statistics-operations-research/. Applications close 21 February 2014.

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. These awards will be restored in 2014-2015, and the (National) committee is now encouraging queries and nominations.

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, visit the web page at 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.

ASOR Website

Although http://www.asor.org.au/ may look a bit dated, click through to Melbourne or Queensland chapters and see up-to-date and colourful websites for ASOR's most active chapters. The ASOR Melbourne website contains a back-catalogue or newsletters, membership forms, registration forms (from time-to-time when we have events) and other goodies. Much credit needs to go to Moshe Sniedovich for keeping our part of the ASOR website up-to-date.

Membership

Membership renewal notices have been sent out to members. A timely response will be appreciated by our membership administration team! Please do let us know if you have not received a renewal notice.

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.

Web Pages of Interest

We are affiliated with FASTS through AMSC. To keep abreast of FASTS, see www.usyd.edu.au/fasts

ASOR National: 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

ASOR Melbourne Committee 2013-2014

Chair — Simon Dunstall,
0417 330 231, simon.dunstall@csiro.au

Vice Chair — Patrick Tobin,
03 9953 3199, Patrick.Tobin@acu.edu.au

Secretary — Kaye Marion,
03 9925 3162, k.marion@rmit.edu.au

Treasurer — Paul Lochert,
03 9802 4628, plochert@bigpond.net.au

Student Representative — Cameron MacRae,
cameron.macrae@rmit.edu.au

Committee:

Moshe Sniedovich
03 8344 5559,
m.sniedovich@ms.unimelb.edu.au

Henry Burley
03 9458 1872, h.burley@latrobe.edu.au

Red Ceglowski
03 9903 4569,
Andrzej.Ceglowski@buseco.monash.edu.au

Gaurav Singh
03 9545 8467, Gaurav.Singh@csiro.au

David Marlow,
david.marlow@dsto.defence.gov.au

Melih Ozlen
03 9925 3007, melih.ozlen@rmit.edu.au

Mohsen Jafari Songhori,
m.jafarisonghori@student.unimelb.edu.au

Baikunth Nath (ex-officio)
0433 926 091, baikunth@unimelb.edu.au

Newsletter Editor — Simon Dunstall

ASOR National Committee 2014

President — Natashia Boland,
Natashia.Boland@newcastle.edu.au

Vice President (Admin, Membership and Public Relations) — Simon Dunstall
0417 330 231, simon.dunstall@csiro.au

Vice President (Education) — Jerzy Filar
jerzy.filar@flinders.edu.au

Treasurer — Kaye Marion,
03 9925 3162, k.marion@rmit.edu.au

Bulletin Editors — Paul Gaertner and Paul Corry,
Paul.Gaertner@dsto.defence.gov.au,
paul.corry@aurecongroup.com

Webmaster — Andy Wong,
a3.wong@qut.edu.au

Public Officer — Phil Kilby,
phil.kilby@nicta.com.au

APORS Representative — Erhan Kozan,
e.kozan@qut.edu.au

IFORS Representative — Patrick Tobin,
03 9953 3199, Patrick.Tobin@acu.edu.au

STA ("FAST") Representative — Natashia Boland

The AUSTRALIAN SOCIETY   for OPERATIONS RESEARCH Inc.
MELBOURNE CHAPTER
GPO Box 1048, Melbourne, Vic 3001