EURO 2015
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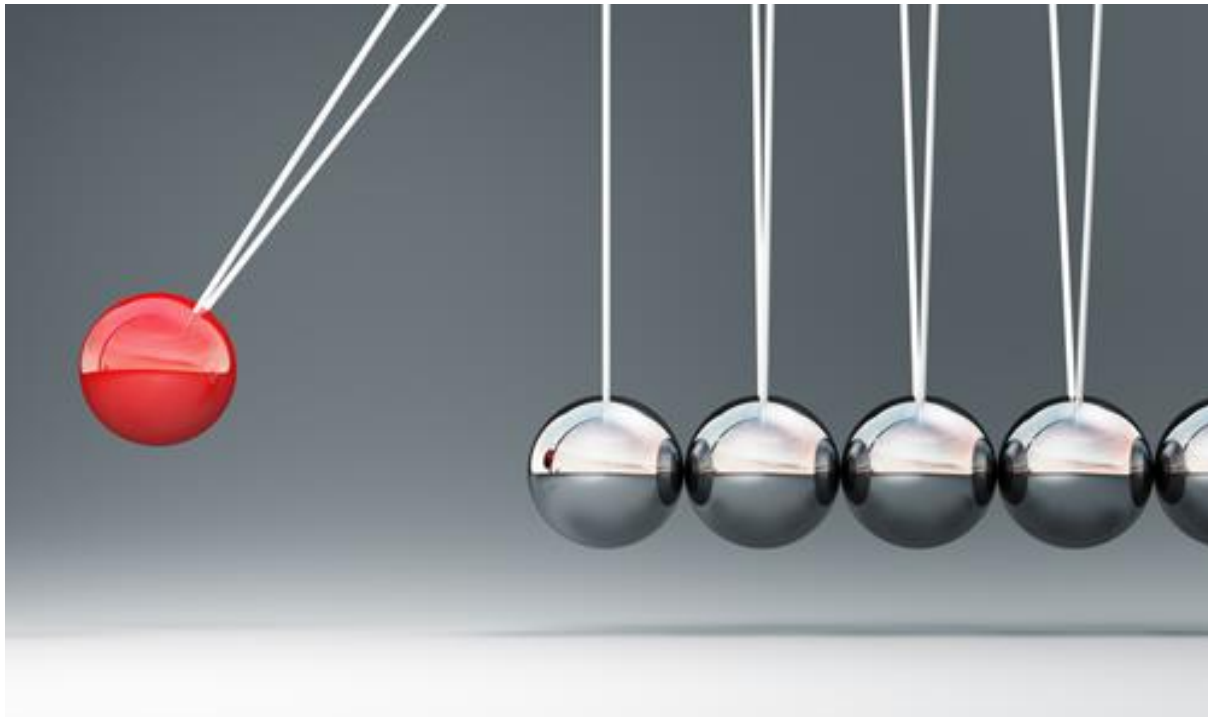
27th European Conference on Operational Research
12-15 July 2015
University of Strathclyde

EURO
The Association of European Operational Research Societies

THE OR SOCIETY

Making an Impact

Practitioner-Centred Activities

THE OR SOCIETY

INTRODUCTION

If you're a practitioner, or interested in what practitioners do, this booklet is for you.

It brings together all the key information about 'Making an Impact', a series of participative activities aimed at helping practitioners to become more effective. It also points to presentations planned as part of the 'O.R. in Practice' area of the conference; and at least some of the very many other sessions of practitioner interest.

Making an Impact includes workshops, panel discussions, networking activities, poster presentations and mentoring sessions that enable you to:

- Explore issues of immediate relevance to practice
- Try out new techniques – are they any good for you?
- Exchange ideas and expertise with people in similar fields
- Meet leading academics and discover what they can do for you – and what you can do for them
- Build your network amongst like-minded professionals

And for the times when you would rather sit back and listen, 'Case Studies in O.R./Analytics' and other streams present case studies showcasing thought-stimulating applications, or exciting methodological developments that can inspire and refresh your own practice.

What's more, there's no need to limit yourself to the sessions described here. If you are interested in particular issues, methods or application areas, you can find interesting presentations across the whole programme.

And if you're not sure what to do at lunchtime, or find yourself with a free session, why not go and look at the exhibitors in the TIC exhibition area, or the posters on display in the TIC auditorium.

We welcome you to browse through this brochure for more details on MAI sessions

CONTENTS

Want more information or detail? There is fuller information on the 'Making an Impact' web pages (www.euro2015.org/MAI), and in the online conference programme (www.euro2015.org).

Some information, such as lists of mentors and exhibitors in the Careers Exposition, may only be available from the Making an Impact desk. And because 'Making an Impact' is participative, some programme details may vary during the conference; so please keep an eye out for news.

Got any questions? Drop by the Making an Impact desk, in the TIC exhibition area, Level 2.

SPEED NETWORKING – GIVING SERENDIPITY A HAND

Monday, 8:30-10:00 - TIC Auditorium A

Tuesday, 17:40-18:30 - TIC Auditorium A

Wednesday, 9:00-10:30 - TIC Auditorium A

Gain new insights, expand your professional network, catch up with O.R. colleagues and last, but definitely not least, have fun!

As Donald Rumsfeld almost said: 'There are lots of things each one of us doesn't know that we don't know'. But *somebody* knows them. That is the glory of networking.

If you're exploring new techniques, new application areas, jobs in new fields…without talking to people who've been there themselves, you are missing out on one of the most vital sources (and in some case, the only possible source) of information.

Networking as information exchange is not only essential to developing good professional practice, it is also an activity where we can all be givers. Generosity with your own knowledge is the mark of a good professional.

Many people prefer to build their networks through serendipitous encounters. Let speed networking turbo-charge serendipity, and help you get to know, and contribute to, more of your community, sooner.

How it works

On entrance, participants will be assigned a group number and a colour – red, yellow or green, dividing all into groups of three, with one of each colour in every group. The facilitator will announce a start by a whistle blow. The networking will proceed as follows:

1. At the first whistle blow, 'green' person will have a minute to introduce themselves to the other 2 group members.
2. The second whistle blow will mark a start for 'red' person's introduction
3. The third whistle will mark a start of 'yellow' member's elevator pitch
4. After three minutes, with fourth, longer than others, whistle blow –
    a. Swap business cards
    b. 'Green' member moves to the group on his/her left (follow green arrows), red - to the right (follow red arrows), yellow stays put.
5. → Back to Step 1 - the introductions start again.

If you have business cards, bring plenty; if not, blank cards will be available for you to write down your name and contact details (please arrive a few minutes earlier to have enough time to prepare your contact cards)

Try out your elevator pitch

One of the opportunities of speed networking is to let people know some key things about you in a very limited time; and one way to do this is with an 'elevator pitch'.

Whether you are an analyst trying to pitch your idea, or a consultant trying to land another piece of work, or an O.R. professional looking for people you could learn from or who could learn from you – what do you say when you meet your target? Imagine you are in an elevator, and have 30 to 60 seconds to provide enough information to leave an impression and maybe be invited for follow-up.

You might want to start with a 'pain statement' - a problem that you are trying to solve. Next, state what your value proposition is and how what you do solves that problem. Lastly, be clear on what you are looking for. Keep it short. Have a hook. Pitch yourself, not only your ideas. For yet another approach to elevator pitches, try this link: http://bit.ly/1GzX5Qi [The two steps of creating an impactful Elevator Pitch, (neither of which people do)]

Note

Three speed networking sessions have been scheduled, to enable more people to take part, but you are advised to come to one session only. The actual length of each session will depend on the number of people who come. A maximum of 75, and a minimum of 24 people will be necessary for each session to run.

PARTICIPATIVE WORKSHOPS

Try out new techniques and see if they work for you. Discuss typical problems faced by practitioners and find out how others have solved them. Reflect on who you are and how you practise. Explore the first steps towards addressing the 'grand challenges' of deprivation and inequality. Take your pick from these and more full- or half-session workshops.

Prof. L. Alberto Franco (Loughborough University) and Dr. Ashley Carreras (Decision Consulting Ltd.) (Monday, 8:30-10:00 - TIC Conference Room 3, Level 3)

MA-09 Group Causal Mapping: A visual approach to cognitive creativity

A practically orientated session beginning with an outline of the types of circumstances for which group causal mapping has proven useful. The emphasis will be upon a live experience of a mapping session on an issue of relevance to all participants. You will get a first-hand experience of developing a group map and thus a greater appreciation of how mapping can help in a variety of contexts.

Giles Hindle and Richard Vidgen, University of Hull (Monday, 10:30-12:00 - TIC Conference Room 3, Level 3)

MB-09 How to add value with business analytics: an introduction to the AnVIM methodology

Being good at analytics and predictive modelling is not enough unless it is accompanied by an understanding of the business model, the sources of value, and the opportunities for transformation. The Analytics Value Innovation Methodology (AnVIM) has been developed, through iterative application in practice, to enable analysts to bring this understanding into the analytics development process.

AnVIM draws on the soft systems methodology for business model mapping and value identification. Analysis of the business model is used to identify opportunities for analytics, which are classified in a matrix according to potential for value creation and viability. Opportunities that are high in value and viability are the focus for analytics development. AnVIM further includes an assessment of data availability and quality, so it works both bottom-up from data or top-down from the business model and value sources, with an ambidextrous ability to explore (e.g., to find new opportunities and patterns in the data) and to exploit (e.g., to drive analytics models from known business issues and opportunities). The workshop will illustrate the AnVIM approach through a vignette of analytics usage in the foodbank and telecommunications industries, and will explain how to apply it.

Martin Kunc, Warwick Business School (Monday, 12:30-14:00 - TIC Conference Room 3, Level 3}

MC-09 System Dynamics: do and don't

This workshop proposes a tour through System Dynamics, a widespread modelling and simulation tool, through applications and insights into its use in organisations and in research. The workshop is ideal for System Dynamics novices, and those with relatively limited experience, looking to share and build knowledge and effectiveness.

Martin Slaughter, Andy Murphy, Hartley McMaster Ltd (Monday, 14:30-15.30 - TIC Conference Room 3, Level 3)

MD-09 Cleaning, joining and trusting large datasets – practical techniques

Like many analysts, we and our colleagues were working with large, messy and disjoint datasets long before the term 'big data' was coined. Creating a coherent dataset and knowing what it can (and can't) be used for with confidence becomes ever more important and this session invites practitioners to exchange practical advice on techniques to achieve this goal. This will be suitable for any analysts interested in this issue, from those with long experience of grappling with messy data to those who are just beginning to confront the task.

Sayara Beg, Chief Data Scientist, Datanut Sciences Consultancy (Tuesday, 8:30-10:00 - Graham Hills GH513, Level 5)

TA-47 Data Science: How To

A fun way to get an understanding of what it means to do 'Data Science'. In this workshop, we will use a small example to work through together in small groups and discuss the key data science components that arise as we work through the small example. The workshop is aimed at anyone - practitioner or academic - who wants to understand what Data Science really is, in its simplest form, removed from all the hype in the media.

TA-51 Efficient modelling and solving of non-linear optimisation problems

In this workshop for O.R. practitioners we give an introduction to formulating and solving nonlinear optimisation problems.

We begin with presenting typical examples and types of nonlinear problems and the categories of available nonlinear solvers.

The second part discusses techniques and modelling approaches focusing on how solvers handle each problem, including
- easy and hard to solve formulations
- cascading in blending models
- convergence for highly degenerate models
- large recourse-type formulae
- MINLP with negative GAP
- purely discrete nonlinear problems

This tutorial is aimed at O.R. practitioners who have some experience with LP/MIP, but no or little experience with non-linear programming (NLP) but who would like to learn about NLP / possibly wish to extend an existing model with some nonlinear features. Bring your laptop and you can try the software!

Benjamin Schumann, PhD,Senior Modeller,decisionLab (Tuesday, 10:30-12:00 - TIC Conference Room 2, Level 3)

TB-08 Put your agents onto maps: agent-based modelling in geospatial environments

Do you like beautiful maps? After all, they provide a huge amount of information visually without overloading our limited information processing capabilities. And how about agent-based modelling for your O.R. problem? It is a useful alternative for solving many O.R. problems by defining individual behaviour.

The problem is that these two worlds rarely meet. They will in this workshop...

Often, O.R. problems require agents to act in a geospatial environment: Where do you place water reservoirs? What airport destinations are best suited for an airline? How do people use road networks? To date, most people either completely neglected combining Agents and geospatial analysis, or resorted to drawing maps manually. Why is that? Quite simply, both agent-based modelling and geospatial analysis tools are rather sophisticated. Mastering both is a challenge.

In this workshop, you will get to see the future of agents and geospatial modelling: We will give you a feel for what it feels like to be an agent on a map. Then, you will send taxi drivers through the maze of central London. You will create a network of pharmacies in one click and get delivery trucks to serve them. You will see agents actually following Google Maps routes (or OpenStreetMap, if you prefer)! And you will learn about other cool capabilities of agents in spatial environments. Bring your laptop and you can try the software.

Gregor Brandt, Director Operations Research at ORTEC Consulting Group (Tuesday, 10:30-12:00 - TIC Conference Room 3, Level 3)

TB-09 OR Consultancy: Art or Science?

Are you a student or academic thinking about making the switch to full-time practice? Or somebody involved in educating students? This workshop will explore the differences between the academic world and the "real" world, and if you're thinking about switching, help give you a better feeling about your chances of success.

O.R. is an abstract topic in itself, however, when applied in practice there is a lot of subjectivity coming into play. Surprisingly (or not), gut feeling and some experience may shorten the duration of any applied OR project drastically, which is important since most of the times, time to come up with a solution that works in practice is limited.

In the workshop, after a short introduction on the O.R. consultancy context, we will discuss several real life examples with the group. Examples of challenging issues that will be addressed during the workshop are:
- Why do universities not deliver reality-ready consultants?
- Why would I want to be a consultant anyway?
- Is an O.R. consultant more an artist or a scientist?

Rosemary Byde, RBS (Tuesday, 10:30-12:00 - Graham Hills GH513, Level 5)

TB-47 Stand out ... for the right reasons!

Get inside the mind of a busy manager with CV fatigue to help you get interviewed and selected for that job you've always wanted. Find out what they notice, what they like and what makes them move on to the next in the pile. Take a closer look at the interview process to see how to sell yourself and get the right job for you. If there's a question you've always wanted to ask about CVs and interviews, make sure you come ready to ask and find out the answer!

*Geoff Royston, Independent (former President, The OR Society) (*Tuesday, 12:30-14:00 - TIC Conference Room 2, Level 3)

TC-08 Making a deeper impact through design thinking.

Any OR/MS practitioner knows that clients often want support not only with *decision* analysis but also with the *design* of systems or processes. This workshop will introduce design concepts and provide examples of 'design thinking' in operational research, explore with participants the extent to which their own practice entails this type of approach and consider how strengthening this could enhance their work and deepen its impact. Whether you are an experienced practitioner with your own reflections to share on the importance of design concepts and skills in 'real world' operational research, or someone at an earlier stage of their career who wants to discover how thinking more like a designer can boost your work performance and professional profile, this workshop has been designed for you!

Gillian Groom, Technical Training Specialist, Minitab Ltd (Tuesday, 12:30-14:00 - Graham Hills GH542, Level 5)

TC-51 Life Beyond Financial Services: Analytical Lessons From Manufacturing

Manufacturing and finance are both sectors which make extensive use of data analytics and analytical tools. But the tools they use are different. There are big opportunities for finance and other service sectors to learn from manufacturing experience. This workshop looks at some specific tools and approaches used in manufacturing, and explores how financial or other service organisations could use these methods.

The workshop is particularly aimed at people working in service sector organisations who would like to broaden their repertoire of analytical tools, and review some of the technical, practical and cultural factors that emerge when applying standard tools in different sectors.

Miles Weaver, Lecturer, Edinburgh Napier University Business School; Jane Parkin, Consultant, Jigsaw Consultants; Steven Paxton, Business Development Manager, Voluntary Action Fund; Keith Wimbles, Chief Executive, Voluntary Action Fund and Anne-Marie Reilly, KTP Associate, Edinburgh Napier University Business School and Voluntary Action Fund (Tuesday, 14:30-16:00 - Graham Hills GH513, Level 5)

TD-47 A Call to Address 'Grand Challenges': A Conversation between the O.R. Community and the Voluntary Action Fund (Scotland)

Addressing 'grand challenges' is very much in the history and tradition of Operational Research (O.R.). There are 'grand challenges' facing us all in the UK and beyond, today.

The 'grand challenges' in Glasgow will be outlined in conversation with the Voluntary Action Fund, a long-established Scottish grant-maker that provides funding and support to a wide range of local and national organisations to tackle disadvantage, challenge inequality and build strong, safe communities. This will be followed by break-out discussions to:

1)   Discuss the nature of the problems and issues in relation to the host of OR methodologies, tools and techniques;
2)   Explore how O.R. professionals can best promote and develop meaningful responses to make an impact in the areas identified.

A 'call to action' and next steps will be identified by the participants to be shared amongst the O.R. community to address some of these grand challenges in Glasgow. Many will be equally applicable across Europe, and, indeed, worldwide.

Phil Jones, Dstl (Tuesday, 14:30-16:00 - Graham Hills GH542, Level 5)

TD-51 Do the right O.R. and do the O.R. right!

This interactive tutorial introduces tools and techniques to help you do effective problem formulation and O.R. study design. Problem formulation identifies what the analysis is trying to achieve and what issues it needs to address. We will look at challenges like understanding your customer and stakeholders' needs and deciding on study scope. Once we have understood the problem, study design identifies what analysis we need to carry out and how. A generic O.R. study design process is used to highlight key design considerations and we will work through a number of practical approaches to develop the design. We will also make use of the resources within a visual knowledge map of problem structuring tools, so bring along your tablet or laptop. This talk is suitable for all, but several years' practitioner experience is desirable.

Richard Weber, Universidad de Chile (Wednesday, 9:00-10:30 - TIC Conference Room 2, Level 3)

WA-08 Data science at work: practical experience from different applications

This workshop provides the opportunity to learn first-hand from several successful data science applications and interact with the respective project leaders. We will present a brief introduction to data science, focussing on its links to optimization, followed by several applications. Then the audience will have the opportunity to interact with the respective presenters, where we will share insights, pitfalls, and practical tips for each of the projects.

Felicity McLeister - Pro Bono O.R. Project Manager (Wednesday, 9:00-9:45 - TIC Conference Room 3, Level 3)

WA-09 part 1: "The best thing The OR Society has done in years" - Pro Bono O.R.

Come to this workshop to find out what Pro Bono O.R. is and what is so good about it. Skilled volunteering is on the rise and Pro Bono O.R. gives O.R. practitioners and academics the opportunity to put their skills to good use. The workshop will include an opportunity to discuss volunteer benefits, what you would like to get out of the scheme, barriers to volunteering, suggestions for improvement and more.

This workshop is for you if you are: UK practitioners/academics who might be interested in getting involved and would like to have more info about how the scheme works hear about the benefits; non-UK practitioners/academics who want to find out about our scheme and how you could adapt it for your own area; existing or past volunteers who want to come and share your experiences.

Paul Randall, former UK Government Analyst (Wednesday, 9:45-10:30 - TIC Conference Room 3, Level 3)

WA-09 part 2: Using Government data: opportunities and issues

For many years successive Governments around the world have been providing open access to increasing volumes of data. The data has been used for a wide variety of purposes: from policy making to advocacy; from improvement programmes to evaluation. This workshop will examine: what is available; the uses to which OR practitioners can put that data; and the difficulties and limitations that are experienced in using official data. It will take UK government data as the initial example, and broaden out to international comparator data. Practitioners will be invited to reflect on their own experiences with, and possible future plans for, using national and international official data. The workshop is also intended for those with limited exposure to official data, but who are interested in the opportunities that it offers to practitioners.

Charlene Timewell, Education Officer at the OR Society (Wednesday, 9:00-10:30 - Graham Hills GH513, Level 5)

WA-47 Making a Real Difference with the O.R. in Schools Programme

O.R. practitioners…did you know that you could refine and develop your repertoire of skills by sharing your experience within the classroom? This exclusive workshop provides insight into one of The OR Society's key strategic projects: O.R. in Schools (ORiS), which promotes Operational Research to young people and their teachers in a bid to fulfil the Society's vision that "every school child knows what O.R. is".

Explore the vital role of an ORiS Volunteer, how they are supported by The OR Society, and the benefits they enjoy. Find out how O.R. practitioners from all backgrounds of experience across the UK are currently enthusing, inspiring, and motivating young people with demonstrations of and discussions about the applications of maths skills to solve real world problems and by opening their eyes to an array of career opportunities within O.R. Enjoy hands-on tasters of the most popular, interactive ORiS sessions and perhaps discover whether you have what it takes to make an impact upon the future of young people.

Jacqui Taylor, CEO and Founder, Flying Binary Ltd (Wednesday, 12:30-14:00 - TIC Conference Room 2, Level 3)

WC-08 Mapping the Future: towards the Internet of Things

In this session Jacqui will introduce the mega trends which will affect individuals, organisations and nations as we move towards a future where 80% of the world's population will be connected online; where Big Data post-Snowden could be contentious and divisive; where the Internet of Things requires an understanding of a new way of communicating with customers and citizens we haven't yet met.

Jacqui will take you on a journey beyond Big Data through Smart Cities and into the Internet of Things. She will share some of the projects her web science company have delivered, and the impact these have had across organisations, nations and globally.

This will set the context for a discussion of the consequences of these developments for professionals working in OR, analytics and data science. An exciting future beckons for all of us who love to work with data. This workshop is for anybody who would like to explore that future.

David Lowe, Defence Science and Technology Laboratory (Wednesday, 12:30-14:00 - TIC Conference Room 3, Level 3)

WC-09 What Works: O.R. for Policy Design

This workshop will be run by the UK OR Society's Special Interest Group on Public Policy Design. It will provide an opportunity for practitioners to share insights with regard to how their practice has supported policy making in the public sector and/or other sectors.   The workshop will comprise a set of informal presentations delivered by the practitioners themselves (using a standard quad format to capture: Purpose; Context; Method; and Outcome) to be followed by a facilitated discussion to identify lessons and other key learning points across the case studies presented.

Ruth Curran, Emma Frost, Arbiba Salib, Department for Energy and Climate Change, UK government (Wednesday, 12:30-14:00 - Graham Hills GH513, Level 5)

WC-47 Trust me! - I'm a modeller

If it isn't one of your greatest fears, it should be: the fear that there is an undiscovered bug in your model. For some (non-OR) UK government modellers this came horribly and very publicly true in 2013: their model's output was challenged by one of the companies affected by the results. It was then shown to be inconsistent with previously published guidance as a result of an error in a spreadsheet and the assumptions underlying it. The cost to the government of the error itself, the judicial proceedings, the delays to investment, and associated consequences has been estimated at £50million.

One beneficial consequence was a major review of modelling in practice, leading to the publication this year of The AQua Book - a handbook of best practice in quality assuring models, from conception to implementation. This workshop, led by one of the people involved in the AQua Book production, will introduce some of the issues, and recommendations, with practical QA of real models. Participants will have a chance to learn about best practice, and to contribute their own views of how to ensure that trust in their model is well-placed.

Dr Frances O'Brien, University of Warwick (Wednesday, 12:30-14:00 - Graham Hills GH542, Level 5)

WC-51 Who do you think you are? Exploring experiences and development of professional identity

Who do you think you are? When you talk to other people about what you do, how do you describe your role? Do you see yourself as a professional with a strong sense of professional identity? Is your sense of identity is linked to the type of work you do and the experiences you've had throughout your life?

If you haven't thought about it much, this workshop will give you a great opportunity to explore what influences who you think you are. If you have a strong sense of identity, this workshop would be a great chance to share your story with others. The workshop will be a practical session with opportunities to reflect on your career choices, the type of work you have undertaken and how this has influenced your perception of who you are professionally. There will be a mixture of creative exercises to help you map out the path of experiences that influence your identity as well as opportunities to discuss and share your experiences with others, some of whom may have had quite different experiences to you or be at different stages in their careers.

WD-09 part 1 The soft side of simulation

Simulation is a powerful analytical technique powered by complicated mathematical and statistical algorithms. Operational simulations I've built have typically been validated to 99% accuracy compared to the real world, as an operation tool that's vital. But… not all simulations have to be that accurate to provide value.

Simulation is an analytical tool yes. It is also a facilitation tool that engages all in problem solving. It is the lead negotiator providing an unbiased point of view that encourages cross team collaboration. It is the exploration vehicle that uncovers unknowns and sparks new ways of thinking.

There is no need to be a simulation expert to build quick and easy models that add real value and insight. Join me to explore how you can leverage the soft benefits of simulation on your projects.

Ian Seed, Cogentus Consulting Limited (Wednesday, 15:15-16:00 - TIC Conference Room 3, Level 3)

WD-09 part 2 How to turn IDEAS into SOLUTIONS fast

The purpose of the workshop is to demonstrate an enhanced brainstorming process. These tools will quickly take you from problem definition to a number of practical, workable ideas to solve the problem. The tools are ones that participants will be able to take back and use in their day-to-day business for solving problems and closing gaps. This workshop is suitable for project leaders, anyone involved in forming and managing brainstorming sessions, and anyone interested in enhancing their brainstorming experience.

Dr Andy Harrison, Director, Analytics Consulting, FICO {Wednesday, 14:30-16:00 - Graham Hills GH542, Level 5)

WD-51 Optimising the real world, robustly

In this workshop for O.R. practitioners we give an introduction to formulating and solving robust optimisation problems. We begin by discussing what robust optimisation is and why we would want to optimise robustly; what are the benefits?

In the second part, we will explore some simple examples of robust optimisation formulations and close with an exploration of a robust formulation of a problem from power generation. Participants are encouraged to bring along their own laptops and install a temporary copy of the Xpress software so that they can try out some of the examples themselves.

ACADEMIC-PRACTITIONER BAZAAR

Tuesday 08:30-10:00 TIC Auditorium A; or drop in any time on Tuesday/Wednesday morning

Discover hot topics sitting on the academic-practitioner interface, and build your links with 'the other side'.

Practitioners are constantly challenged to demonstrate that their results are based on solid evidence; academics are constantly under pressure to demonstrate results and evidence of impact. This session aims to help academics and practitioners to build interactions, through presenting posters flagging up issues, developments and case-studies across the academic-practitioner interface.

The bazaar will run in two half-sessions; posters 1-11, then posters 13-22. Each presenter (in numerical order) will have a maximum of 60 seconds to talk about a slide of their poster, explaining what is interesting about it and encouraging the audience to visit their poster. At the end of 60 seconds, a whistle will blow and the next presenter will take over. Once all the posters in the session have been presented, the audience will be free to visit the posters that most interest them where they will be able to discuss with the presenters.

The posters will remain on display until Wednesday morning, with contact details for when the presenter is absent; so do drop in even if you miss the bazaar itself.

Fuller details about each poster can be found on euro2015.org/MAI, and following the link to 'academic-practitioner' bazaar).

1. **Issues in Warehouse strategy for Asia's Largest Setup**, *Sadia Samar Ali*

We are developing Asia's largest warehouse. How can we analyse dock scheduling and route optimization to ensure we do actually achieve competitive advantage?

2. **Psychometrics in credit and marketing applications**, *Galina Andreeva, Dean Caire, Wendy Johnson*

We are looking for industry partners to support research into the link between psychological traits and credit repayment performance, to help in particular where credit applicants have little or no credit history (also extend to consumer behaviour for marketing applications).

3. **Estimating Household composition from Electricity Smart Meter Data: A Neural Network Approach**, *Paula Carroll, John Dunne, Michael Hanley, Tadhg Murphy*

We show how academics and practitioners can work together with emerging data mining techniques and new sources of 'Big Data'. This study specifically explores the use of Neural Networks to determine household composition from electricity smart meter data.

4. **Optimize volunteer schedule reliability using column generation**, *Joanne Suk Chun Chew*

How does a non-profit organization schedule volunteers, when it knows that they often don't turn up – unlike employees. By using integer programming and column generation, that's how.

5. **Solving Nonlinear Programming Problems**, *Zsolt Csizmadia*

This poster shows how practitioners can overcome some of the practical issues that face nonlinear solvers when addressing real-life problems.

6. **The Space Limitation Problem of the Container Stacking Yard: Container Hotel as a Solution**, *Noorul Shaiful Fitri Abdul Rahman*

The total number of containers handled by ports almost doubles every year, creating serious space capacity problems. Using the solutions presented here can increase the future efficiency and effectiveness of handling containers, and the profit margin of ports.

7. **The 'soft underside of procurement'; soft OR and commissioning for outcomes**, *David Gilding*

Local Authority Public Health authorities purchase services from providers who are required to improve individual health outcomes, reduce population level health inequalities and improve health equity. Can soft OR techniques and systems thinking help?

8. **Real-life vehicle routing problems: gaps between theory and practice**, *Gerben Groenendijk, Leendert Kok*

Generating high quality vehicle routes in practice is a challenging task, and the literature often ignores real-life constraints. To better serve the customer's needs, we strive to close the research gap by collaboration between academics and practitioners.

9. **Robust Optimisation**, *Andy Harrison*

Robust optimisation is an efficient paradigm for modelling optimisation problems under uncertainty – ie most problems. We show some examples, and invite you to challenge us with more.

10. **Tactical Management of Decentralized Global Supply Chains Superstructures under Uncertainty**, *Kefah Hjaila, Luis Puigjaner, Antonio Espuña*

Do you have to make tactical decisions about decentralized supply chains? We present a decision support tool to optimize these through win-win negotiations.

11. **ChemDecide – a MCDA software for the Chemical-Using Industries**, *Richard Hodgett*

ChemDecide is a suite of MCDA software tools which has been used for addressing decisions such as route selection, equipment selection, resource allocation, financial budgeting and project prioritisation by many companies. Come and see ChemDecide, and the industrial-academic collaboration which made the software development possible

12. **Simsbury and Cyberhenge: Using O.R. for Neighbourhood Planning**, *Ian Mitchell*

Neighbourhood plans offer opportunities for practitioners and academics to exercise their talents in soft and hard techniques whilst benefitting communities. There are many strategic choices. Come talk to me to find out more about work in Amesbury, home of Stonehenge.

13. **Methodological Proposal for Strategic Decision Making at Mining Companies in Chile, based on the ANP and Aspects of Environmental Economics**, *Alexis Olmedo Navarro*

How should organizations take account of environmental problems and threats when designing their strategies from their mission and vision? This work demonstrates a decision model for estimating the implications of macro factors.

14. **A Scalable Tool for Solving very Large Size Network Design Problems**, *Cemalettin Ozturk, Alejandro Arbelaez, Deepak Mehta, Barry Osullivan, Luis Quesada*

Many areas like VLSI circuit design, optical networks, QoS routing, traffic engineering, and computational sustainability require resilient networks designed within many constraints. We have developed a generic tool for designing such networks, that can easily scale very large sized networks and can generate good quality solutions in a very limited time.

15. **Reflections on being an academic researcher in residence at Great Ormond Street Hospital**, *Christina Pagel*

I have been embedded as a researcher in residence within a hospital's critical care unit for 18 months. I contrast this experience with previous (and ongoing) traditional collaborations between academia and local hospitals, and explore the implications for future closer collaboration between academia and frontline health services.

16. **Can we have both efficiency and staff well-being in rostering shift-workers?** *Jane Parkin, Sanja Petrovic*

The client wanted shift-worker rosters that took into account not only efficiency measures but also staff well-being. A joint practitioner-academic team successfully produced both recommendations for the client to improve rostering, and an academic paper on how to incorporate well-being.

17. **Waste flow optimization: an Italian success story**, *Matteo Pozzi*

We applied state-of-the-art O.R. to achieve substantial efficiency and effectiveness improvements to the logistics+plant system of Italy's leading waste disposal company. Our web-based decision support system supports strategic, tactical and operations planning and what-if analysis.

18. **Adjusting the Size of a Bank's Branch Network after Mergers and Acquisitions: Contributions from Location Theory**, *Dídac Ruiz-Hernández*

How do you eliminate redundant branches and adjust the capacity of the remaining after a bank merger or acquisition? Our Capacitated Branch Restructuring Model is designed to address this issue, even when future demand is uncertain

19. **My Body Data – personal and data driven healthcare**, *Ramunė Šabanienė*

The new breed of high-tech self-monitors, measuring heartrate, sleep, temperature, steps per day etc provides Big Data that can reveal much more about our bodies than even our doctors may know. This poster explores how each of us can collect and use such data to enhance our health.

20. **Optimization models for the hydrothermal dispatch in Brazil**, *Reinaldo Castro Souza, André Luís Marques Marcato, Fernando Luiz Cyrino Oliveira, Bruno Henriques Dias*

Long range planning of the Brazilian Electrical System (BES) is challenging because uncertain rainfall affects the availability of hydro generation that forms 70% of the whole. We summarize a 5-year collaboration between academics and practitioners that successfully addressed the problem.

21. **How to solve difficult cutting and packing problems? By semi-infinite optimization!** *Jan Schwientek, Tobias Seidel, Karl-Heinz Kuefer*

Gemstone cutting is challenging: an irregularly shaped raw gem interspersed with inclusions must be cut into blanks so as to maximise the total value of the manufacturable precious gems. Our work resulted in many publications, a software product and the first fully automated production process.

22. **O.R. for Operational Resilience**, *Maurizio Tomasella, Fernando Moreira, Jamal Ouenniche, Martin Belen-Barragan, Roberto Rossi, Tom Archibald, Dan Black, Davide Mare, Jake Ansell*

All organisations, communities and entire economies need resilience: a capability to withstand adversity and to recover quickly from disruption. We present ways of promoting resilient decision making at the operational level, from logistics and supply chains to financial services.

ACADEMIC-PRACTITIONER ROUND TABLES

Listen to the panel, and have your say, in an exchange of views on the barriers and opportunities surrounding academic-practitioner collaborations; and contribute to designing a blueprint for successful partnerships.

Each of the two round table sessions will be led by a panel of academics and practitioners with extensive experience in collaboration. After brief introductions from the panel, the audience will be invited to ask questions and share their views. To help ensure that you get your chance to comment, please submit questions or comments in advance, at the 'Making an Impact' desk in Level 2 TIC Building Exhibition area.

Round table 1: expectations from both sides

Tuesday, 12:30-14:00 - Graham Hills GH513, Level 5

This discussion will cover some of the following topics (the list is not exhaustive):

- Expectations and potential benefits from each side;
- Problems and challenges;
- Lessons learnt from successful collaborations;
- Lessons learnt from unsuccessful collaborations.

Panel members

Stephen Lorrimer	NHS England (Chair)
Gregor Brandt	ORTEC Consulting Group, ORTEC
Laura Reid	SIMUL8 Corporation
Thomas Archibald	Business School, University of Edinburgh
Cathal Brugha	Centre for Business Analytics, University College Dublin
Simon Taylor	Computer Science, Brunel University London

Round table 2: what can we do to support collaboration?

Wednesday, 14:30-16:00 - Graham Hills GH513, Level 5

This discussion will cover some of the following topics (the list is not exhaustive):

- Building research capacity in O.R.;
- Different formats of collaboration;
- Specific areas that would benefit from more academic-practitioner interventions;
- Possible structures to support better interaction.

Panel members:

Richard Eglese	Management School, Lancaster University
Ahti Salo	Aalto University School of Science
Daniele Vigo	University of Bologna
Jean André	Applied Mathematics-Operations Research Team, AIR LIQUIDE
Frédéric Gardi	Innovation 24
Plus others TBA	

O.R./ANALYTICS CAREERS EXPOSITION

Tuesday, 14:30-16:00 - TIC Auditorium A, Level 2

Looking for a career move some time in the coming year or so?

Employers large and small, from business and academia, will be on hand to talk informally about the range of opportunities they have on offer, and how to apply. They would love you to come along and talk to them!

MENTORING: FOR PRACTITIONERS AND WOULD-BE PRACTITIONERS

Monday, 14:30-16:00 - TIC Auditorium A, Level 2

Tuesday, 10:30-12:00 - Graham Hills GH542, Level 5

Wednesday, 14:30-16:00 - TIC Conference Room 2, Level 3

Are you grappling with an issue where outside support would be helpful? Or would you like some personalised career or development advice? Sign up for a 20-minute 1-1 mentoring session with an experienced practitioner, to:

• Gain valuable advice - Your mentor's experiences could shed a whole new light on your problem!

• Develop your knowledge and skills - They could help you identify the skills and expertise you need to succeed. They might advise you on where to go for the information you need.

• See new perspectives - At the conference you could speak to someone you'd never normally meet in your day to day work.

• Build your network - Maybe you'll keep in touch after your session!

At the MAI desk in TIC Exhibition Area Level 2, you'll find details of everyone who has volunteered to be a mentor at the conference, and when they are available: just sign up in one of their free slots. To get the most from the session, prepare:

What problem do you want help/advice on; what would you like to know from your mentor?

Expect to ask questions. Example topics one might want help on include:

Managing your development and career

- Switching sectors / changing jobs
- Transitioning from technical 'doer' to managing technical teams
- Finding the right long-term mentor
- Making contacts, building a network
- Getting recognition when you're a technical expert
- Writing a good CV and doing well in interviews

Managing your team

- Recruiting, training, rewarding and retaining the right people
- Making sure your modellers spend their time modelling
- Delegating without tears
- Inspiring others

Making more of an impact

- Selling your services
- Communicating technical results / Influencing non-technical people
- Getting projects implemented

OTHER PRACTITIONER-AIMED ACTIVITIES

There's plenty more of interest to practitioners going on at EURO2015. Here are just some of the things to watch out for.

Practice-oriented presentation streams

Case studies in O.R./Analytics: reflecting on both the *technical* content of the work and the *process* of the O.R. intervention, for projects that have provided valuable outcomes for the client organisation across a wide variety of industries

> O.R. in Civil Government
>
> Defence and Security Applications
>
> Behavioural O.R.

and many others of more specialist interest including Practical O.R. In Healthcare, O.R. For Public Health, O.R. In Sports, Humanitarian Applications, O.R. For Development, Routing – Emerging Applications; O.R. Applications in Industry;

European Excellence in Practice Awards

Six case studies presenting outstanding examples of practice, competing for the prestigious EEPA award

Keynotes/tutorials

Including Michael Trick on business analytics and key trends; Horst Hamacher on evacuation planning; Tony O'Connor on O.R. at the heart of government; Stefan Nickel on supply chain planning; Eva K Lee on healthcare systems; and Raimo P. Hämäläinen on behavioural O.R.

Exhibition and vendor sessions

The exhibition on the entrance level of the TIC building has seven software companies showing their latest tricks to make solutions faster and easier. Most of these are practitioner oriented software companies. This year we have three companies who, although they have been around for many years, are new to showing at EURO conferences – so well worth dropping in to see what they are doing.

We are running 'Vendor Sessions' on Tuesday in TIC rooms 2 and 3 for most of the day (see the App, or the schedule, for exact times and full abstracts). These give each exhibitor the chance to talk about their work in detail.

(There are also book and journal publishers exhibiting and an organisation that runs tourist trips around Scotland)

For more information, feedback, enquiries: visit the MAI desk in the TIC Exhibition Area, level 2, or email us at MAI-EURO@theorsociety.com