

IFORS

NEWS

INTERNATIONAL FEDERATION OF OPERATIONAL RESEARCH SOCIETIES

FROM THE PRESIDENT

Héctor Cancela <cancela@fing.edu.uy>

Welcome to the December 2025 issue of the IFORS Newsletter!

This edition marks the end of the first year of the current Administrative Committee tenure. During this year, many activities have taken place.

There have been large community meetings, both EURO at Leeds, UK, and more recently INFORMS at Atlanta, US, which have attracted a large number of participants from academia and industry, with week-long multi-track programs. Both events included keynotes by IFORS Distinguished Lecturers, respectively Prof. David SIMCHI-LEVI and Prof. Carlos COELLO-COELLO.

In the Asia-Pacific region, we supported travel scholarships for participants in the APORS Youth Forum in Hong Kong, and we sponsored the ORSN national conference in Nepal, which was attended by former VP Francis MIRANDA in representation of IFORS. The ICOVAOpt-2025 event in Hanoi, Vietnam, was attended by VP Yu-Hong DAI.

IFORS was also present in several important national conferences in the Latin American region: the OPTIMA 2025 conference in Coquimbo, Chile; the SBPO conference in Gramado, Brazil; and the CSMIO 2025 in León, Mexico. IFORS supported two ALIO events, the ELAVIO school and the HOPER school, co-organized respectively with partners in the EURO and the NORAM regions.

In the African region, IFORS sponsorship supported the ICAHS international conference in Hammamet, Tunisia, the ORIDSAN 2025 conference held in Ilorin, Nigeria (attended by VP Fernando CAMACHO in representation of IFORS), and the ORTASA school in Benin.

Our journals International Transactions in Operational Research and Sustainability Analytics and Modeling have also been very active, with several calls and special issues which attract worldwide interest; VP Greet VANDEN BERGHE has been the contact point for the Publications Committee, which supports these most important research outlets. Also, the IFORS Newsletter is very much active; under the leadership of VP Sibel ALUMUR ALEV, all issues are being timely published and now also includes a series of video introductions which are published on our YouTube channel.

IFORS triennial conferences also required attention; under the stewardship of VP Rina SCHNEUR, it was agreed that the 2029 conference will be held in Calgary, Canada, organized by INFORMS in collaboration with CORS.

IFORS Global Webinar series was continued, with a September session, organized by Past President Janny LEUNG and Secretary Gavin BLACKETT, attracting hundreds of participants. And increasing our content on the aforementioned YouTube channel. The presence of IFORS in social media and networks also includes our website and LinkedIn group, which is steadily growing in participants and attention.

I also want to highlight the creation of IFORS Global Women's Network, GLOW, for addressing gender diversity issues. This network builds upon experiences in different regions and societies, and looks forward to promoting the participation and recognition of women in our discipline.

As we close 2025, we also want to remind you that we are approaching our triennial conference, to be held in Vienna, Austria, 12-17 July 2026. Abstract submission opens on December 1st. We encourage everybody to check details at <https://ifors2026.at>, and to participate in this meeting, a unique opportunity which brings together the global OR community! 🌐



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FROM THE EDITOR IN CHIEF

Sibel Alumur Alev <sibel.alumur@uwaterloo.ca>

As 2025 comes to a close, we are pleased to bring you another issue of the IFORS Newsletter.

As I write this editorial, I have just returned from the INFORMS 2025 Annual Meeting in Atlanta, USA. Serving as the Vice-President of IFORS, representing the North American Operations Research Societies (NORAM), and being a Senior Member of INFORMS, these conferences hold a special place in my heart. INFORMS is the largest member of IFORS and also one of its founding members. These annual meetings bring together thousands of OR/MS colleagues from around the world, providing a unique opportunity to reconnect with old friends, meet new colleagues, and witness the growth of our community.



▲ The IFORS Distinguished Lecture was delivered by Prof. Carlos Coello Coello at the INFORMS 2025 Annual Meeting.

For me personally, the INFORMS Annual Meetings are always special. I get to see and spend time with my former PhD supervisor, Bahar Kara, who travels all the way from Turkey. I also reconnect with former classmates from Bilkent University, with whom I shared wonderful memories during my master's and doctoral studies, and who are now spread across the globe, achieving impressive things. Equally rewarding is watching my own former and current PhD students present their work, which always fills me with pride. The conference schedule is usually hectic for me, with editorial board meetings, panel moderations, sessions to chair, and numerous talks to attend, but the experience is both busy and inspiring. Above all, the moments I get to spend, even for just a few minutes, with these wonderful colleagues and friends once a year are truly priceless!

As tradition, IFORS hosted a Distinguished Lecture at the INFORMS 2025 Annual Meeting, delivered by Prof. Carlos Coello Coello, and I had the honor of presenting him with the plaque. IFORS also had a booth in the conference exhibit hall, represented by our IFORS Secretary, Gavin Blackett. We recorded a wonderful video with Gavin for this issue, which you can watch here: <https://www.youtube.com/watch?v=NudE0gXfMco>

I am excited to note that, in this issue of the IFORS

newsletter, we feature a unique comic-style article on *Using AI to Identify Criminal Gang Members in Chile* authored by Fredy Humberto Troncoso Espinosa and Richard Weber. I would like to thank our section editors, John Medhurst and John Ranyard, for suggesting this innovative idea, which has become a captivating piece. I am very proud of this pioneering initiative.



Further in this issue, the OR and Development section features an article titled *Persistence and Progress: The IFORS Story on OR for Development – A look back and ahead at the federation's continuing mission to advance OR for development*, written by our section editor, Elise Del Rosario. This insightful article beautifully captures IFORS's long-standing commitment to advancing Operations Research for development across the globe.



▲ IFORS Secretary Gavin Blackett was at our booth promoting IFORS. You can watch the video [here](https://www.youtube.com/watch?v=NudE0gXfMco).

The Conferences section once again spans all continents, showcasing excellent experiences, brought together by Jinal Parikh and Gerhard Wilhelm-Weber. The same editors also prepared this issue's book review titled "Network Design with Applications to Transportation and Logistics", edited by my esteemed Canadian colleagues Teodor Gabriel Crainic, Michel Gendreau, and the late Bernard Gendron.

Last but not least, don't forget to mark your calendars for the triennial IFORS Conference, taking place in the beautiful city of Vienna from July 12–17, 2026. The abstract submission deadline is March 15, 2026. For more details, you can visit the conference website: <https://ifors2026.at/home>.

I wish you a wonderful end to the year and look forward to connecting with you in the next issue, which will welcome 2026.

Sincerely,
Sibel Alumur Alev
Editor-in-Chief 🌐

IFORS FELLOWS

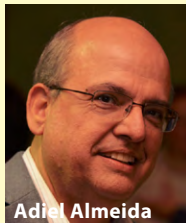
The IFORS Fellows Award serves to recognize a distinguished individual's contribution to international operational research and its communities and was established in 2020. Details about the nomination and selection process can be found on the [IFORS website](#).

An initial group of IFORS Fellows were chosen by the IFORS Administrative Committee and include the IFORS Presidents who led IFORS before 2020. A new cohort of Fellows has been inducted each year since then. All their names can be found on the [IFORS website](#).

Earlier this year, a committee, composed of three former IFORS Presidents: Janny Leung (Chair), Grazia Speranza and Michael Trick identified the 2025 inductees and provided the motivation for the Award.

A formal award ceremony will take place at the 2026 IFORS Triennial conference in Vienna.

2025 INDUCTEES



Adiel Almeida

Adiel Almeida: For his contributions to research in the fields of Multiple Criteria Decision Making (MCDM), Group Decision and Negotiation (GDN), Decision Support Systems (DSS), and Risk, Reliability and Maintenance (evidenced through a strong of awards), and practical applications of OR methods.



Janny Leung

Janny Leung: As recognition for her service to IFORS as its President from 2022 to 2024.



Shmuel Oren

Shmuel Oren: As recognition for his pioneering work in vehicle logistics, for his contributions to practical applications of OR as a co-founder of RouteSmart Technologies, Inc., and for his service in disseminating OR knowledge globally as editor of many international journals, most significantly Networks.

The IFORS Fellow Award is a way for IFORS to express the gratitude of our community to the friends and colleagues who gave an exceptional contribution to the development of international operations research. On behalf of IFORS, thank you!



IFORS²⁰²⁶

The 24th Conference of the International Federation
of Operational Research Societies

12-17 JULY
VIENNA, AUSTRIA

Call for Editor

Sustainability Analytics & Modeling

IFORS, the International Federation of Operational Research Societies, invites applications from candidates to become the new Editor-in-Chief for Sustainability Analytics & Modeling (SAM).

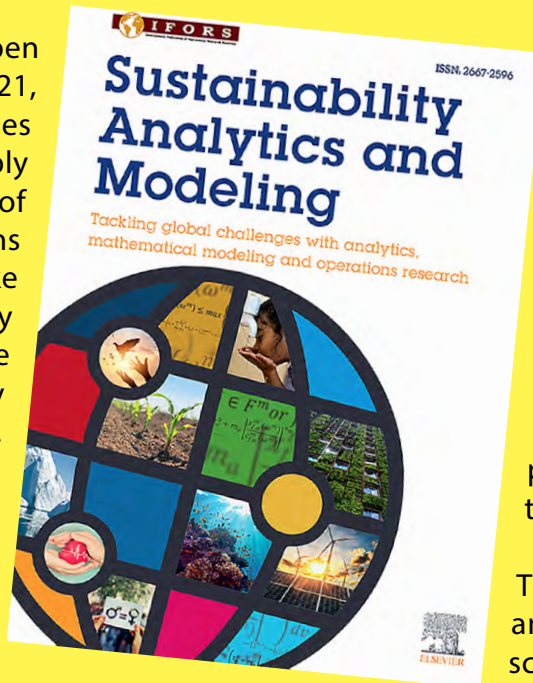
Established as an open access journal in 2021, SAM publishes articles that develop and apply quantitative methods of analytics and operations research (OR) to take on global sustainability challenges. These challenges are many and broad in scope. They involve poverty, hunger, health, well-being, education, equality, water, sanitation, energy, economies, industry, infrastructure systems, smart communities, consumption and production, climate, peace, and justice, among other topics, all of which are targeted by the 17 sustainable development goals (SDGs) of the United Nations.

Published papers contribute through quantitative studies that create deeper understanding of the mechanisms that cause our global sustainability challenges, provide situational awareness or future predictions, uncover interconnections and their role in creating the problem, and develop potential solutions. Papers that develop policy recommendations from quantitative investigation are also encouraged.

Full information on the journal can be found at:

[Sustainability Analytics and Modeling | Journal | ScienceDirect.com by Elsevier](#)

The founding Editor-in-Chief, Professor Elise Miller-Hooks, completes her current editorial term in December 2025 and will stand down



once the handover to the new Editor is complete. She is supported by over forty associate editors and editorial board members worldwide. IFORS is now seeking a new Editor-in-Chief to lead the team, with the role commencing in 2026. The appointment is for an initial period of three years, potentially renewable a second three-year period.

The selected editor should be an internationally recognised scholar in operational research, analytics or a closely related field,

be able to demonstrate a clear understanding of SAM's aims and objectives and have constructive ideas on its future development to meet the challenges and needs of the subject and the organisation.

The role includes collaborating with the existing editorial team and Associate Editors and managing submissions through Elsevier's editorial manager, the journal's online submission system. The new editor will receive support during the transition period to ensure a smooth onboarding process. An honorarium is paid to the editor.

Please send your CV (of no more than four pages) and a cover letter by email to Gavin Blackett, IFORS Secretary, secretary@ifors.org. Your cover letter should explain your interest in and vision for the development of the journal.

The deadline for expressions of interest is **31 December 2025**. 🌐

Persistence and Progress: The IFORS Story on OR for Development

A look back—and ahead—at the Federation’s continuing mission to advance OR for development

For more than five decades, the International Federation of Operational Research Societies (IFORS) has steadfastly championed the use of Operational Research to address the challenges of developing countries. Through conferences, scholarships, prizes, and interregional collaboration, the Federation has nurtured a global community committed to applying analytical thinking for inclusive growth. This article revisits that enduring journey—celebrating its achievements, recognizing its lessons, and inviting reflection on how IFORS can renew its approaches to meet the evolving needs of our times.

Early Recognition of OR for Development (1970s–1980s)

IFORS engagement with Operational Research (OR) for development has deep roots, dating back to the 1970s. At the 1975 IFORS conference in Japan, the theme “OR in the Service of Developing Economies” underscored the role OR could play in addressing development issues. This era saw thought leaders like Morse and Brown articulating how IFORS might help advance OR in developing nations. In the 1980s, momentum grew: at the 1984 IFORS Triennial in Washington, D.C., there were discussions on actions needed to promote OR in developing countries. A tangible outcome was the first **OR Teachers’ Workshop** conducted in 1986 in Ahmedabad, India. These workshops aimed to train OR educators from developing nations, emphasizing practical applications to local problems. IFORS also introduced a new award to incentivize development-focused research – the “Third World Prize” first awarded at the 1987 IFORS conference in Argentina. These early initiatives laid the groundwork for IFORS’s formal programs targeting the developing world.

Formation of the Developing Countries Committee (1990–1993)

By 1990, IFORS moved to formalize its support for OR in the developing world. At the 1990 IFORS Triennial Conference in Athens, IFORS President Bill Pierskalla officially approved the creation of a Developing Countries Committee (DCC) as a dedicated arm for development-related activities. This decision reflected recognition at the highest levels

of IFORS that developing countries required special focus. The Athens conference featured a parallel “OR for Developing Countries” forum where delegates discussed how the context and challenges of applying OR in poorer countries differ markedly from those in industrialized nations. Key points included the need to emphasize practical applications over theory, the prevalence of ill-structured problems with scarce data and high uncertainty, and the importance of training OR analysts to handle political and social complexities. An action plan emerged: IFORS would start a **quarterly newsletter** to connect OR

practitioners interested in development and draft a position paper to guide IFORS policy on developing countries.

At the subsequent **1993 IFORS conference in Lisbon**, these ideas translated into concrete programs. The year before, the first **International Conference on OR for Development (ICORD)** had taken place, and IFORS reaffirmed its commitment. IFORS President Brian Haley

announced that the ICORD would be held as a regular triennial event, ensuring an ongoing forum on OR for development. IFORS also established an **OR Education Committee** focused on developing countries, with a mandate to: (1) adapt OR education to developing-country problems (placing less emphasis on abstract theory and more on methodologies for ill-structured, resource-constrained problems), (2) provide incentives (grants, projects) to develop such methodologies, and (3) encourage international exchanges of students and academics involving developing nations. One early achievement was IFORS’s sponsorship of the **First Latin American Summer School in OR** held in Chile in January 1994, bringing young researchers together for training.

The **Developing Countries Committee (DCC)** itself was constituted in the early 1990s to drive these efforts. Roberto Galvão (Brazil) served as the first DCC Chair, heading a team of members from both developing and developed countries. The DCC’s mission was to spur scientific discussion on issues unique to developing countries and to implement the new programs. >>

	1975 Triennial Conference Japan had the theme OR in the Service of Developing Economies . Paper by Morse and Brown put forth the role that IFORS could play in developing OR in developing countries
	1984 Triennial in Washington discussion on actions that need to be taken
	1986 First Teachers’ Workshop in Ahmedabad was conducted
	1987 Triennial in Argentina carried out the first Third World Prize competition.
	1990 Triennial in Athens – President Bill Pierskalla formally approved the formation of the IFORS Developing Countries Committee (DCC)
	1992 International Conference on OR for Development was held in Ahmedabad.

Figure 1 - IFORS initiatives in the early years.

IFORS TRIENNIAL CONFERENCES	
Date	Location
1957	Oxford (UK)
1960	Aix-en-Provence (France)
1963	Oslo (Norway)
1966	Boston (USA)
1969	Venice (Italy)
1972	Dublin (Ireland)
1975	Tokyo/Kyoto (Japan)
1978	Toronto (Canada)
1981	Hamburg (Germany)
1984	Washington DC (USA)
1987	Buenos Aires (Argentina)
1990	Athens (Greece)

>> Under the DCC's guidance, IFORS launched a **Developing Countries Newsletter** in 1991 to sustain the enthusiasm generated in Athens and Lisbon.

Newsletter and Information Exchange

Communication was a key early strategy. The **Developing Countries Newsletter** debuted in September 1991 and ran through 1993, with a total of 13 issues. The issues alternated between general topics in OR for development (edited by Roberto Galvão) and "OR Training in Developing Countries" (edited by Nitin Patel of India). This newsletter provided a forum for OR practitioners to share case studies, insights, and educational resources relevant to developing economies.

In 1994, the newsletter evolved into a publication called **"Direct Connection to Developing Countries,"** which continued (under various editors, including Han Chun Kwong, Hans Ittmann, and Arabinda Tripathy) until 2007. In mid-2007, IFORS merged these efforts into the newly-launched **IFORS News**—the general newsletter—by including a dedicated OR for Development (ORD) section in each issue. This ORD section, initially edited by A. Tripathy, has ensured that success stories, project reports, and opportunities related to OR in development remain highly visible to IFORS members worldwide.

Ahmedabad Declaration (1992), which outlined how IFORS should support OR in developing countries. The declaration urged IFORS to actively help in *developing new methodologies for ill-structured problems, training OR practitioners on development issues, establishing OR centers for collaborative research, raising seed funding, making OR publications affordable*, and maintaining a newsletter and regular conferences on OR for development. In essence, it was a roadmap for IFORS's development agenda, much of which guided the activities described in this article.

Following the success of ICORD I, **ICORD II** took place in 1996, in conjunction with a Latin American regional OR conference. Organized by Claudio Bornstein (Brazil) and Jonathan Rosenhead (UK), it continued the dialogue and generated new ideas for IFORS's role in development. During 1997–1999, further joint events were held – including one in South Africa that gathered OR society representatives from across Africa and beyond. That event led to a dedicated discussion on the "State of OR in Africa," resulting in concrete steps: a committee (via OR Society of South Africa) was formed to create an Africa-wide OR network, encouraging OR activities and communication across the continent. Initiatives included building a directory of African OR practitioners, sharing South African OR society resources (newsletters, journal) with other African countries, and collaborating on real projects and training workshops across Africa. This was a significant push toward **Africa-focused OR development**, later bolstered by support from EURO (the European OR Society) and others.

Several subsequent **ICORD conferences** were held in the 2000s and 2010s, often in partnership with regional bodies. For example, **ICORD III** was held in Manila, Philippines, in the early 2000s, featuring a special session on **OR case teaching methods**. In 2005, an ICORD in Jamshedpur, India, led to discussions that called for a "Jamshedpur Agenda" to update IFORS's development strategy. In Venezuela (2007), an ICORD brought together 45 participants from 16 countries, including policymakers – notably a Venezuelan minister who spoke on using OR's problem-structuring methods in national development. Each ICORD provided training components as well: for instance, a two-day workshop on problem-structuring methods preceded one conference, and another featured a workshop on **facilitated decision analysis** for policy issues. These conferences covered diverse application domains – from health and education to agriculture and disaster relief – reflecting the breadth of development challenges addressable by OR.

In later years, IFORS often **jointly organized ICORDs with the EURO Working Group on OR for Development (EWG-ORD)**. The **EWG-ORD**, founded in 2006, shares similar goals of promoting OR for sustainable development and has hosted annual workshops across Europe and beyond. Joint ICORD/EWG workshops were held in locations such as Rome (2013), Lleida, Spain (2014), Colombo, Sri Lanka (2015), Quebec, Canada (2017), and others, with themes such as "OR: Enabling Good Governance" and "Impacting Development". These events typically draw participants from every continent, showcasing practical OR projects and research that improve lives in developing communities.



▲ Figure 2: Evolution of the DC Newsletter until included as a section of the IFORS News first published in 2007

The newsletter and IFORS News ORD section have been vital in **disseminating knowledge and connecting practitioners**. Through these channels, IFORS shares educational materials and resources. In fact, the DCC also launched a **Web-Based Resource project**, compiling OR teaching and case study materials relevant to developing countries. With support from the IFORS webmaster and Gerhard W. Weber, this online repository helps educators and practitioners access tools and examples tailored to development challenges. The continued flow of information through newsletters, websites, and publications has kept the OR-for-development community informed and engaged.

International Conferences (ICORD) and Workshops

Perhaps the most visible IFORS initiative has been the ICORD series. The **first ICORD was held in 1992 in Ahmedabad, India**, fulfilling one of the goals set at Athens. ICORD I attracted about 60 papers from 14 countries (though many more submissions were hindered by civil unrest in India at the time). The conference produced the landmark



Figure 3. ICORD was last held in 2017 in cooperation with the EWG ORD. Diverse papers were presented by 27 participants from Algeria, Australia, Austria, Brazil, Chile, Colombia, France, India, Iran, New Zealand, Nigeria, South Africa, Tunisia, Turkey, UK and the US on the topic *OR / Analytics For A Better World*

Alongside conferences, **training workshops** remained a staple of IFORS's approach. After the initial 1986–1990 series of OR teacher workshops in Asia, IFORS organized another major **Teachers' Training Workshop** in 2004 (Manila) with international instructors to update OR educators on modern methodologies. These workshops aimed to "train the trainers," influencing how OR was taught so that students in developing countries appreciate its practical value for local decision-making. Moreover, IFORS has periodically supported **specialized training schools**. In 2011, IFORS, EURO, and the French OR society ROADEF co-sponsored an OR **summer school in Benin (West Africa)** for African doctoral students, focusing on applied OR techniques for local problems. This gave emerging researchers from across Africa exposure to new tools and forged a pan-African OR network.

Student Exchanges and Scholarships

To nurture young talent, IFORS created a **Student Exchange Program** in the mid-1990s. Starting in 1994, IFORS began sponsoring promising early-career researchers from around the world to attend OR schools organized by regional societies ALIO (Latin America) and EURO. The ALIO schools, known as ELAVIO, and the EURO summer/winter institutes (ESI/ESWI) provide intensive training and networking for youth in OR. IFORS funding (typically covering travel costs) has especially benefited participants from developing countries, who receive priority consideration. Dozens of such scholarships have been awarded since 1994, enabling students to learn advanced OR topics and build international connections. This investment in human capital helps seed future OR leaders who understand both cutting-edge methods and the nuances of applying them to development issues.

By focusing on student exchanges and training, IFORS has made a tangible impact on capacity-building in the OR communities of developing countries.

African Initiatives and New OR Societies

Africa has been a special focus area. IFORS sponsored a seminal conference on "Mathematics in Industry" in Zimbabwe (1995), which helped catalyze OR applications in Southern Africa. In the early 2000s, IFORS and EURO co-funded a series of OR conferences in West and East Africa: one in January 2003 (West Africa) and another in September

2003 in Nairobi, Kenya, organized by the fledgling OR Society of Eastern Africa (ORSEA) and local universities. These meetings, under the theme "Applications of OR/MS in Development and the Potentials for Africa," featured papers on socio-economic issues and aimed to jump-start regional OR collaboration. A follow-up West Africa conference took place in Niger in 2004.

By mid-2000s, a regular series called **OR Practice in Africa (ORPA)** conferences emerged, often with IFORS support. ORPA conferences (2005 through 2008) were held in South Africa and elsewhere, focusing on applied OR in African development context. IFORS even facilitated discussions among national OR groups in Nigeria, East Africa, and South Africa, which eventually led to the proposal of an African regional OR society, later realized as **African Federation of OR Societies (AFROS)** in 2016.

These efforts demonstrate IFORS's role in **fostering OR communities**: it has actively encouraged and helped establish new national OR societies in developing countries. In recent years, IFORS welcomed new members such as Nepal and Tunisia (both joined in 2011) and Nigeria (2015). It has also guided OR proponents in other countries (e.g. Indonesia, Sri Lanka) towards ensuring that OR professionals in developing nations have local networks and representation in the global OR family.

Regional Initiatives

IFORS is an umbrella to regional groupings (European EURO, Latin American ALIO, Asia Pacific APORS, and North American NORAM), and these networks have been leveraged to advance OR in development. In particular, the Association of European OR Societies (EURO) has been a proactive partner with its creation of the *EURO Working Group on OR for Development (EWG-ORD)*. For a time, the EWG-ORD organized conferences jointly with ICORD. The Latin American OR community (ALIO) has likewise collaborated particularly with the ELAVIO schools. Teaching Workshops had been sponsored by APORS and NORAM has helped sponsor OR education workshops. Such partnerships demonstrate IFORS's strategy of *influence multiplication*: using regional networks to reach grassroots OR communities and share best practices for development-oriented OR.

IFORS Prize for OR in Development

One of IFORS's longest-running development initiatives is its **Prize for OR in Development**, awarded at each IFORS Triennial Conference since 1987, except in 1990. Called the "Third World Prize" for the first three competitions, it honors outstanding OR projects carried out to solve real problems in developing countries – spanning areas like public health, education, agriculture, infrastructure, poverty alleviation, and more. Early on, eligibility was restricted to nationals of developing countries, but this was later relaxed to open the competition to any work **targeting a developing country's needs**. Over the years, IFORS has adjusted the prize criteria and increased the reward (the current top prize is \$4,000, up from the initial \$1,000). Typically, six finalists are invited to present their work at the IFORS conference, with IFORS waiving their registration fees, and the winners, announced at the conference banquet.>>

>> This high-profile competition not only provides an incentive for impactful OR projects but also shines a spotlight on innovative applications of OR in resource-constrained settings. Many prize finalist papers have subsequently been published in scholarly journals (often in the IFORS publication *International Transactions in OR*) to reach a wider audience. The IFORS Prize has become a prestigious accolade, encouraging OR practitioners worldwide to tackle development challenges with creativity and rigor.

Continuing Evolution and Future Directions

Over six decades since IFORS's founding, **Operations Research for development has grown from a marginal interest to a core component of IFORS's mission.** The federation's initiatives – from the Developing Countries Committee and newsletters, workshops, exchange programs, and prizes – have created a supportive ecosystem for OR practitioners focused on developing-world problems. These activities have been sustained and adapted by successive IFORS administrations and regional groups. Notably, EURO's active involvement through the EWG-ORD and joint conferences has amplified the reach of IFORS's development efforts.

Today, IFORS recognizes that the landscape of development and the resources available are changing. At almost 70 years old, IFORS **faces the need to reflect on its OR for Development strategy** and how to align it with current needs. Key considerations for the future include reassessing the objectives set in the 1990s for relevance today, evaluating which ongoing programs (conferences, publications, training, etc.) have the most impact under today's conditions, and possibly **crafting a new agenda** to address emerging challenges (such as the Sustainable Development Goals, new technologies, and changing demographics). This may involve realigning existing initiatives or launching new ones and identifying actionable steps to pursue these refreshed objectives.

In summary, IFORS's contributions to OR for development in developing countries have been extensive and multifaceted. **From historical milestones like the 1992 Ahmedabad Declaration to the latest OR for Sustainable Development publications, IFORS has persistently championed the use of OR to improve lives in the developing world.** The federation's blend of conferences,

Conference	Title of Paper
2023, XXIII, Santiago, Chile	Safer Homeland: Developing Evacuation Simulation and Humanitarian Relief Logistics Models for Effective Disaster Preparation and Response in Taiwan
2020, XXII, Seoul, Korea	JalTantra: Impacting the practice of rural water network design in India
2017, XXI, Québec City	A Robust DEA-Centric Location Based Decision Support System for Expanding Recreovia Hubs in Bogota
2014 XX Barcelona	Optimizing Ambulance Moveable Station Location and Vehicle Repositioning to Reduce Response Times for the City of São Paulo
2011 XIX Melbourne	A Decision Support Methodology for Increasing School Efficiency in Bolivia's Low-Income Communities
XVIII, 2008, Sandton	Integrated aircraft fleet and routing at Tunisair .
XVII, 2005, Hawaii	A decision support methodology for increasing public investment efficiency in Brazilian agrarian reform
XVI, 2002, Edinburgh	A Combinational Auction Improves School Meals in Chile Network Service Scheduling and Routing
XV, 1999, Beijing	Study of China Grain Output Prediction
XIV, 1996, Vancouver	A Project Evaluation System in the State Economic Information System of China : An Operations Research Practice in the Public Sector
XIII, 1993, Lisbon	A Linear Programming Model for Distribution of Electrical Energy in a Steel Plant India
XII, 1990, Athens	
XI, 1987, Buenos Aires	The National Assessment of Education in Chile



IFORS PRIZE Past Winners

Figure 4. Past IFORS Prize details are shared through IFORS News and the website, providing valuable case studies of OR making a difference on the ground.

capacity-building workshops, information sharing, and recognition of excellence has helped build a global community of OR professionals dedicated to development. As IFORS moves forward, this strong foundation will guide its response to new development challenges, ensuring that Operations Research remains a powerful tool for tackling poverty, inequality, and sustainability issues in the years to come.

Sources:

This article is mainly based on the presentation made by the author during the XXIII IFORS Triennial Conference. Please contact the author for specific reference sources.

- Elise del Rosario, "IFORS Focus on Developing Countries: A quick overview" – IFORS 2023 Presentation, Santiago, Chile.
- Graham Rand, IFORS VP at large, 1998-2000, primary source of 1975-1985 milestones
- IFORS History and Archives
- IFORS News and Newsletters
- Records of IFORS Conferences and DCC Reports 

ABOUT THE AUTHOR

Elise del Rosario was Chair of the IFORS Developing Countries Committee from 1995 to 2003. From 2001 to 2003, she was IFORS VP at Large and then IFORS President from 2007 to 2009. As Past President, she handled Communications- the IFORS News and the Website and held this post until 2017. She also headed the EURO Working Group in OR for Development (EWG-ORD) from 2014 to 2017 after receiving the EWG ORD Senior Fellow award. 



Using AI to Identify Criminal Gang Members in Chile

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▲ Authors Fredy Humberto Troncoso Espinosa and Richard Weber

of models has been developed that uses a combination of optimisation and network analysis to identify further potential suspects for investigation. These models have been used in collaboration with prosecutors and the police to support criminal investigations in Chile.

This family of models includes the **Social Network Criminal Suspect Evaluator (SNCSE)**, which evaluates the importance of an individual in the criminal network, the **Linear Rational Association Model (LiRAM)**, which can identify suspects for further investigation based on two known members, and the **Steiner Tree Prosecutor (StPro)**, which only needs a single known member as a starting point. These algorithms have been combined into a single suite of tools – **Fiscal Heredia** – which has proved itself as an important tool in solving criminal cases in Chile.

Methodology: Suspect Prioritisation and Group Detection from Two Known Suspects

Given available information and its structure, a microeconomic approach was used to model both the behaviour of the criminal planner and the interactions between criminals. This led to the parallel development of two complementary models, SNCSE and LiRAM.

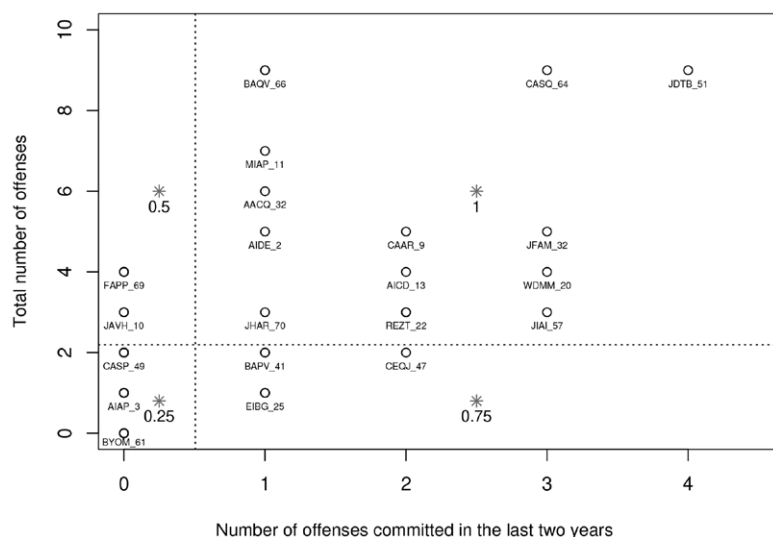
SNCSE was designed to overcome the limitations of traditional node evaluators in criminal network analysis, which typically focus only on structural connectivity or centrality. By directly integrating the individual criminal propensity of each member into node importance evaluation and drawing on concepts of human and social capital, ego-network structures^[1] and the microeconomic dynamics of social interactions, SNCSE enabled more precise prioritisation of suspects than classic metrics alone.^[1]

In parallel, LiRAM was developed from an optimisation

perspective inspired by microeconomics, by modelling the formation of a criminal group as a utility-maximising process. In this framework, criminal leaders are assumed to act rationally when selecting collaborators, balancing expected criminal income, trust, incentives, and the cost of potential information leaks. Integer programming was used to identify the most probable subgroups of accomplices given two initial suspects, thus providing focused recommendations to investigators.^[2]

For both approaches, the **Propensity to Belong to a Criminal Group (PCG)** was defined as a consistent measure of criminal capacity. PCG quantifies the individual propensity of each member to participate in a criminal organisation, independently of specific network connections. It is calculated from a combination of attributes reflecting knowledge, skills, and experience relevant to group-based crime and serves as a fundamental indicator for both SNCSE and LiRAM, as illustrated in Figure 1.

Propensity to Commit Burglary in an Uninhabited Place



▲ Figure 1. Obtaining the Propensity to Belong to a Criminal Group

The values marked with (*) are from two key attributes: total number of offenses and number of offenses committed by a suspect in the last two years. Subsequently, the Criminal Analysis Unit of the Public Prosecutor's Office of the Bio Bío region in Chile provided a dataset from a real criminal gang embedded in a larger criminal network. This made it possible to adjust and validate both SNCSE and LiRAM and enable future methodological advances and operational implementation.

Building on LiRAM and the microeconomic logic of utility maximisation under constraints, a second algorithm was developed, StPro, which requires only one known suspect [3]. It introduces an integer linear programming model based on the single point weighted Steiner Tree Problem to reveal connected subgroups of individuals with high criminal propensity within a network. This original research was tested with both synthetic data and data provided by the Regional Prosecutor's Office of Bío-Bío. Its simple structure and ability to operate with minimal information, infer hidden structures, and suggest high-risk targets, made it a highly valuable operational tool for the National Prosecutor.

The impact of these tools was most evident in 2023, when the National Prosecutor's Office of Chile used StPro to help dismantle a notorious gang known as "Los Influencers," responsible for violent carjackings and robberies. The investigation started with four known suspects. StPro was run separately for each one, identifying seventeen additional suspects. After photographic identification by the victims, ten members were successfully prosecuted. This case marked the first time in Chile that Analytics-based algorithms were used to support a criminal prosecution, receiving wide media coverage and endorsements.

Next Steps

Close cooperation with the users of Fiscal Heredia has enabled its successful implementation and has indicated how it might be improved to provide additional benefits. The proposed new version, designated **K-Suspect**, will:

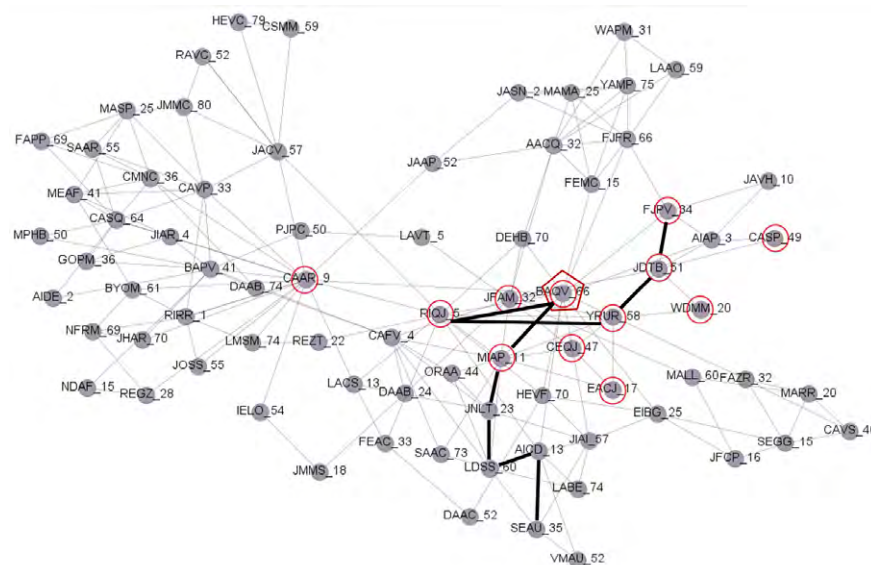
- Handle multiple initial suspects simultaneously,
- Incorporate new evidence progressively,
- Reduce false positives (individuals identified as suspects of belonging to a criminal group, when they are not), and better address investigative needs, where suspect validation is progressive and priorities must be continuously adjusted.

The journey, which began with the parallel development of SNCSE and LiRAM as complementary models, laid a solid methodological foundation for the subsequent creation of StPro and, currently, the evolution toward K-Suspect. This process demonstrates how the integration of microeconomics, data science, and, together with deep knowledge of the problem and available data, can generate tools for fighting crime. It also highlights the importance of early-stage research, academic mentorship, and collaboration with public institutions. This impact is not a coincidence. It is the result of years of research, visionary partnerships, and the ability to turn a problem into algorithms with significant social value.

[1] Troncoso, F., & Weber, R. (2020). Integrating relations and criminal background to

identifying key individuals in crime networks. *Decision Support Systems*, 139, 113405.

- [2] Troncoso, F., & Weber, R. (2020). A novel approach to detect associations in criminal networks. *Decision Support Systems*, 128, 113159.
- [3] Troncoso, F., & Weber, R. (2024). The Steiner Tree Prosecutor: Revealing and disrupting criminal networks through a single suspect. *PLoS ONE*, 19(12), e0312827.
- [4] <https://www.dii.uchile.cl/2024/04/30/fiscal-heredia-es-destacado-en-cuenta-publica-de-la-fiscalia-nacional/> 



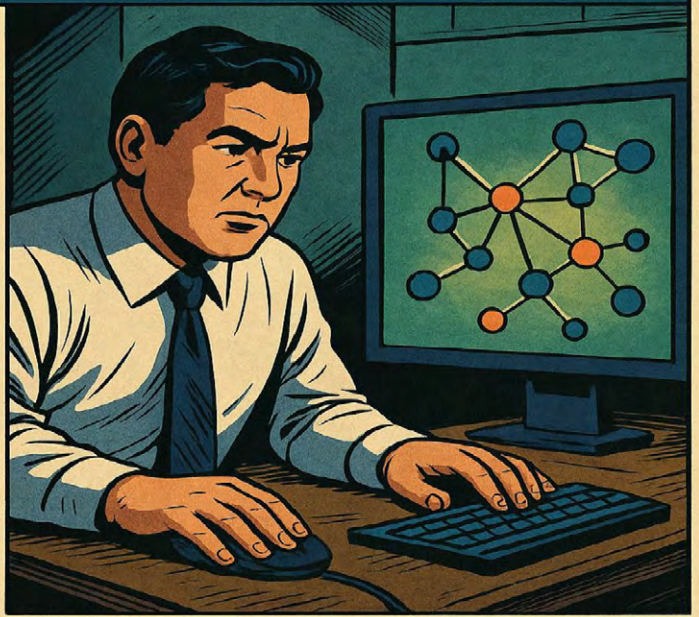
▲ Figure 2. Network of 77 criminals, of which 12 belong to a criminal gang (marked by circles).

This figure shows the network provided by the Regional Prosecutor's Office of Bio-Bío, through which the models (SNCSE, LiRAM, and StPro) have been calibrated. StPro starts from one identified individual (pentagon) and can uncover five additional members of the gang. This is a real example of the application of StPro in a criminal network, starting from one suspect.

Subsequently, St Pro was incorporated into a Decision

FROM CRIME SCENE TO ALGORITHM:

HOW INVESTIGATORS SHAPED TOOLS FOR REAL RESULTS



I'M GOING TO TELL YOU A STORY.

I'M NAME IS FREDY TRONCOSO. I'M A PROFESSOR AT THE UNIVERSITY OF BIO-BIO IN CHILE, AND I WORK DEVELOPING ALGORITHMS TO COMBAT CRIMINAL GANGS.

IT ALL STARTED WITH A VISIT TO THE POLICE.

Twelve years ago, I visited the **INVESTIGATION POLICE OF CHILE (PDI)** and I learned how the police investigated criminal gangs.

DURING A VISIT TO THE CHILEAN INVESTIGATIVE POLICE, ANALYSTS SAID:

WE CAN SEE THE LINKS... BUT WE DON'T KNOW WHO TO FOCUS ON. AND WHERE DO WE INCLUDE CRIMINAL CAPACITY?

FREDY TRONCOSO

THAT QUESTION STARTED MY CURRENT INVESTIGATION. THE MAIN PROBLEM WAS THE DATA—WE DIDN'T HAVE REAL DATA THAT DESCRIBES A CRIMINAL GANG. REAL DATA IS VERY SENSITIVE AND NOT EASY TO GET.

WITH NO DATA, WE ONLY HAD LOGIC AND PAPER.

CHALLENGE: NO DATA

WE HAD NO ACCESS TO REAL DATA AT FIRST.

IT WAS TOO SENSITIVE, AND TOO SCARCE TO TRAIN A MACHINE LEARNING MODEL.

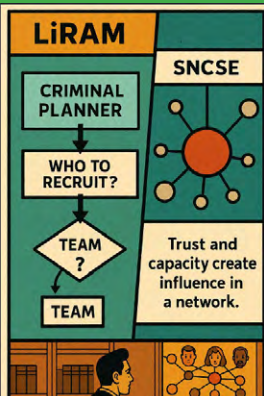
SO WE TURNED TO MICROECONOMIC TO MODEL BEHAVIOR BASED ON LOGIC AND INCENTIVES.

PCG: 0,82-HIGH

CRIMINAL BACKGROUND

FOR THE MODELS, WE PROPOSED THE CONCEPT OF PCG — PROPENSITY TO BELONG TO A CRIMINAL GROUP.

THIS INDEX REPRESENTS CRIMINAL CAPACITY AND IS CALCULATED USING THE BACKGROUND OF THE SUSPECT.



BASED ON THIS IDEA AND MICROECONOMIC BEHAVIOR, WE PROPOSED TWO MODELS. **LiRAM** FINDS MEMBERS OF A GANG USING TWO KNOWN SUSPECTS, AND **SNCSE** FINDS KEY MEMBERS IN THE NETWORK.

MODELING BEHAVIOR

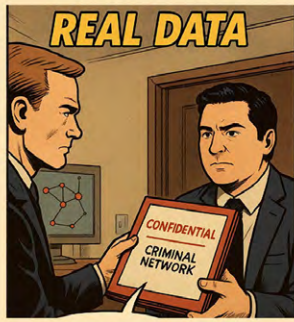
We modeled how a criminal selects team members.

LiRAM

SNCSE

And gaining influence in a network through trust and capacity.

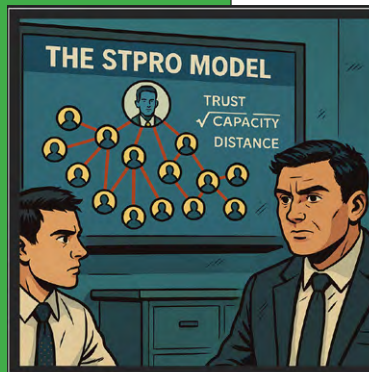
WITH SYNTHETIC DATA, THE MODELS WORKED WELL, BUT WE NEEDED TO TEST THEM WITH REAL DATA.



REAL DATA

FIVE YEARS LATER, THE PROSECUTOR OFFICE OF BÍO-BÍO— THE PLACE WHERE I LIVE— FOUND MY THESIS ON THE INTERNET. WE TALKED ABOUT THE MODELS, AND THEY GAVE ME A REAL DATASET.

THAT WAS A GREAT MOMENT. IT ALLOWED US TO IMPROVE THE MODELS AND PUBLISH THEM.



Later, I proposed StPro (Steiner Prosecutor).

This is similar to LiRAM but starts with only one known suspect.

Having a known suspect is common in investigations, and it represented a great opportunity.

StPro worked! It was used in a real case. Prosecutors started with four suspects and found seventeen more. All suspects were recognized by the victims. It was a famous case in Chile and the first one using AI.

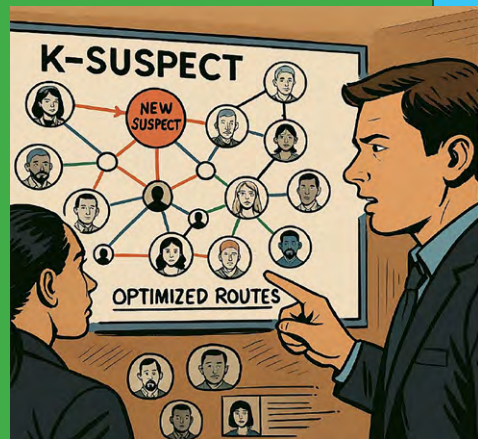
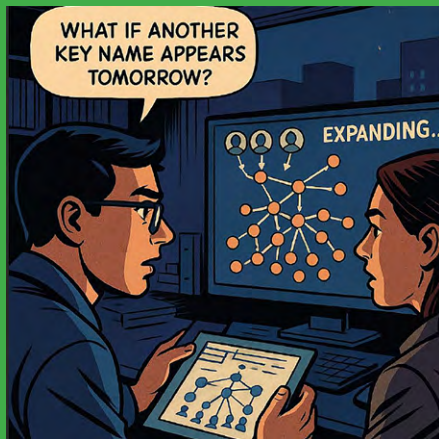
The case of 'Los Influencers.'



TOOL ADOPTION

THESE MODELS ARE USED IN AN AI TOOL CALLED "FISCAL HEREDIA."

HEREDIA IS THE NAME OF A MAIN CHARACTER FROM A CHILEAN CRIME NOVEL



We proposed *K-Suspect*, a model that starts with more than two suspects. It reduces false positives—that means suspects who are not really in the gang. This helps prosecutors focus their resources better.

NETWORKS
CRIME
ECONOMICS
OPTIMIZATION

IT STARTED WITH A QUESTION.

USING A NETWORK FOCUS, MICROECONOMICS AND OPTIMIZATION, WE CREATED IMPORTANT ALGORITHMS TO FIGHT CRIME IN CHILE.

THE GOAL HAS ALWAYS BEEN TO CREATE USEFUL AND SIMPLE TOOLS TO COMBAT CRIME



AND NOW, MY QUESTION IS: WHAT HAPPENS IF WE DON'T HAVE A KNOWN SUSPECT, FOR EXAMPLE IN HOMICIDE CASES? COULD WE FIND A CRIMINAL GANG WITH NO SUSPECT? WE'LL SEE.

THANK YOU FOR YOUR ATTENTION WE ARE GOING TO KEEP CREATING ALGORITHMS TO COMBAT CRIME.

¡GRACIAS!

TO BE CONTINUED.





CONFERENCES

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INFORMS Returns to Atlanta for 2025 Annual Meeting

<https://pubsonline.informs.org/doi/10.1287/orms.2025.03.18/full/>

Edwin Romeijn <edwin.romeijn@isye.gatech.edu>, Juan Pablo Vielma

*This article was previously printed in *OR/MS Today*.

After more than 20 years, Atlanta hosted the [2025 INFORMS Annual Meeting](#) on October 26-29, 2025, welcoming back more than 6,000 members of the *INFORMS* community, including academic scholars, students, and industry leaders and experts. The meeting served as a catalyst for continuing innovations in the fields of *Operations Research (O.R.)*, *analytics* and *Artificial Intelligence (AI)* with the goal of making smarter decisions for a better world.

Powering Smarter Decisions

The lineup of esteemed [plenary and keynote speakers](#) featured experts in optimization, AI, analytics, quantum computing, social policy, supply chains, the environment, and sports – all with the goal of making smarter decisions for a better world!

Margaret Brandeau, Stanford University, gave the opening plenary, “Operations Research and Social Policy: Models That Can Make a Difference”. Brandeau addressed one of the most pressing challenges in American society: how operations research can inform policy decisions tackling intertwined social crises - from the opioid epidemic and homelessness to criminal justice reform and healthcare inequity. The *plenary* set a reflective, purpose-driven tone for the conference, reminding attendees that *OR/MS* is not just about optimization algorithms, but about optimizing lives and communities.



▲ Margaret Brandeau launching the program of the 2025 INFORMS Annual Meeting with her opening plenary.

Ramayya Krishnan, Carnegie Mellon University, delivered an insightful address, “Two Heads Are Better Than One Redux: AI,

OR/MS, and Society”, that explored the evolving partnership between *artificial intelligence (AI)*, *operational research* and *management science (OR/MS)*, and the critical role these disciplines play in shaping a responsible, effective and human-centered future for technology.



▲ Ramayya Krishnan delivers the Monday plenary session.

Eric Phillips, Delta Air Lines, shared how one of the world’s leading airlines is harnessing the power of operations research, data science and artificial intelligence (AI) to shape the next century of flight. In his plenary session, “Delta at 100: Harnessing a Century of Insight to Power the Future of Travel with AI,” Phillips emphasized that the company’s success is built on both mathematical rigor and the human spirit that defines air travel. Phillips invited colleagues Peter Butkowsky and Amanda Bramlett for a fireside chat offering a closer look at Delta’s analytics ecosystem.



▲ Peter Butkowsky, Amanda Branlett and Eric Phillips take part in a fireside chat (from left to right).

Pascal Van Hentenryck, Georgia Tech, presented the closing plenary on the final day of the 2025 INFORMS Annual Meeting, on how learning and optimization can be fused to solve industrial-scale problems faster and more reliably. His talk, “*Learning to Optimize: Foundations and Industrial Impact*,” explored how many industries repeatedly solve similar optimization problems and how these patterns can be learned to dramatically speed up decision-making.



▲ Pascal Van Hentenryck delivers the closing plenary session.

The keynote session lineup included speakers from MIT; University of California, Berkeley; Universidad de Chile; Carnegie Mellon University; CINVESTAV-IPN; and UPS Logistics, as well as INFORMS Fellows and Franz Edelman Award and UPS George D. Smith Prize winners.

New This Year: Job Market Showcase and Virtual Option

This year, INFORMS introduced the [Job Market Showcase Track](#), a new initiative designed to allow job seekers, including recent and soon-to-be graduates, to gain exposure by presenting their research and engaging with prospective employers in both academia and industry

in a centralized setting and dedicated cluster. This new component of the program complemented the Career Fair, which is designed to offer job seekers another excellent opportunity to explore a range of career options, meet with leading organizations, and engage in direct conversations with potential employers about job openings and career advancement.

The 2025 INFORMS Annual Meeting featured a new virtual access to plenaries and keynotes and TutORials on Operations Research for those who could not make the trip to Atlanta.

Networking, Career Development and Recognition

Pre-meeting workshops offered hands-on learning opportunities and in-depth explorations of cutting-edge methodologies and tools, designed to provide valuable insights and practical knowledge from leading experts in the field.

In addition, the TutORials sessions served as an introduction to both emerging and classical subfields of O.R. and management science, allowing members of the INFORMS community to keep pace with new developments in the field and expand their expertise while networking with fellow professionals.

The poster sessions and technology showcases shared the latest innovations and research breakthroughs. This year, the conference featured an increased number of poster presentations on a diverse range of topics, allowing conference participants to engage in a more conversational way with presenters through dynamic presentations and interactive displays.

Cordially thanks to dear **Ashley Kilgore**, for communication and editing assistance that make this reprint possible. 🌐

OR2025: Bielefeld Brings Quantitative Approaches for a Complex World

Marc Goerigk <marc.goerigk@uni-passau.de>

Under the motto “*Quantitative Approaches for a Complex World*”, the International Conference on Operations Research, which is the annual conference of the German Operations Research Society (GOR), took place from September 2-5, 2025, in Bielefeld (<https://or2025.de/>). The event, which was seamlessly organized under the leadership of Matthias Amen, brought together more than 400 participants from 31 countries to exchange ideas in 99 sessions with 281 presentations, including 3 plenary and 9 semi-plenary talks.

Arriving by tram at the “Universität” stop, visitors were welcomed by large OR2025 banners and a modern foyer leading directly to registration. A special advantage of the venue was its compact design: all lecture halls were located within one building, creating a “university of short distances.” Only for lunch did participants leave for the canteen, where fresh air offered a welcome break from intense discussions.

The conference began Tuesday afternoon with the Dokt!OR program, this year focusing on “*Funding Opportunities for Young Researchers*” and “*ORntrepreneurship*”. More than 100 early-career scholars attended panel discussions with Uta Mohring, Michael Schaub, and Marlin Ulmer on research funding, and with Geoffrey De Smet, Dustin Feld, Jens Peter Kempkes, and Gerald Lach on how to transform research into successful companies. Pre-conference workshops by Hexaly and GAMS complemented the program. The evening Get-Together in the canteen offered an informal setting to meet old friends and new colleagues.

Wednesday’s festive opening ceremony featured the presentation of the GOR Science Award (sponsored by INFORMS) - the society’s highest honor - to Stefan Minner (TU Munich). His plenary lecture on “*Inventory Optimization: What and Why*” illustrated the interplay between data availability and inventory management. The ceremony also included the presentation of the GOR awards. >>

>> The winning works addressed diverse challenges, from stochastic scheduling and event graph visualization to energy systems modeling, bilevel optimization, and routing in e-commerce. Congratulations went to *Judith Schulze*, *Marta Piperno*, and *Samuel Wolf* in the GOR Master Award (sponsored by GAMS), *Yasmine Beck*, *Jonas Finke*, *Maximilian Löffler*, and *Alexander Lindermayr* in the GOR Dissertation Award (sponsored by Gurobi), and *Ninja Scherr*, *Andrei Comănesci*, and *Stefan Voigt* in the GOR Young Researchers Award (sponsored by Fraunhofer ITWM).



▲ Welcome to the University of Bielefeld. (c) Carolin Famulla.

Two further *plenary lectures* enriched the scientific program. *David Pisinger* (Technical University of Denmark) offered an excellent overview of optimization challenges in offshore wind farms, focusing on turbine placement and inviting collaboration on these pressing problems. *Ruben Ruiz* (Amazon & Universitat Politècnica de València) sparked lively debate with his talk “*From Academia to Industry: The Case for Simplified Operations Research in Amazon Web Services*”, arguing that algorithms must be simple to maintain and apply in practice rather than over-specialized. The discussion extended beyond the session, both on-site and online.

Nine *semi-plenary lectures* provided additional highlights,



▲ Winner of the GOR Science Award, *Stefan Minner*, gives the opening talk. (c) Stefan Sättele.

covering sustainable supply chains, policymaking, healthcare, forecasting and lot sizing, the future of optimization research, Bayesian methods, logistics planning, humanitarian aid allocation, and column generation. Together, they showcased the breadth and societal impact of OR.

Beyond the academic sessions, the social program created lasting impressions. The *welcome reception* in the Stadthalle, opened by Bielefeld’s Third Mayor *Christina Osei*, combined a fine buffet with reflections on the wide applications of OR. The *conference dinner* in the historic “Hechelei” offered a glimpse of old Bielefeld, where participants shared impressions of the conference in a relaxed atmosphere. Meanwhile, some enjoyed the city’s annual wine festival after long conference days.

A heartfelt thank-you goes to the organizing team - *Matthias Amen*, *Kevin Tierney*, *Michael Römer*, their colleagues, and many student assistants - for delivering a perfectly run event. With OR2025 concluded, preparations now look ahead: OR2026 will take place in *Passau* from September 1-4, 2026 (<https://or2026.de/>). 🌐

Conference of the Statistics and OR Spanish Society: SEIO2025 celebrated in Lleida, Spain

Begoña Vitoriano <bvitoriano@mat.ucm.es>, **Lluís M. Plà Aragonés** <lluismiquel.pla@udl.cat>

The 41st *National Conference of the Statistics and OR Spanish Society (SEIO 2025)* was successfully held in Lleida (Spain), at the Municipality Congress Palace called “*La Llotja*”, on June 10-13, 2025. The event was organized by the sole society in Spain joining researchers from *Statistics and Operational Research* disciplines. One novelty of this edition was the inclusion of the emerging discipline of *Data Science* in the objectives and name of the Society.

The Conference combined a perfect mix of presentations on *Statistics* and *OR* works given by participants, but there was also room for working group meetings and keynote speeches. For instance, on June 11, 2025, a *Keynote Speech* was given by *Bahar Kara* entitled “*Disaster Resilient Cities: An OR Approach to Disaster Management*”. We honored also distinguished members of our OR community with the *SEIO Medal* like *Emilio Carrizosa* (Medal 2024) and *Ramon Alvarez-Valdes* (Medal 2023) who gave also an interesting

speech about “*Making good decisions (and understandable). Some personal reflections*” and “*Is it easy to load a truck in a fine way? Contributions from cutting and packing approach*”, respectively. The *SEIO medal* recognizes the professional trajectory of senior researchers who are proposed by their colleagues and finally approved by a jury.



▲ Visit to the old Cathedral of Lleida (Seu Vella).



▲ Closing session by the Past President (on the left) Begoña Vitoriano, current President Dolores Martinez and OC Co-Chair Lluís M. Plà.

SEIO as a society gives support and promotes different working groups that have their slot in the program to have their own meetings and enlist members interested in the topic of the working group. Existing working groups in SEIO related to OR are those devoted to Multicriteria Decision Methods, Location, Game Theory, Continuous Optimization, Heuristics and Metaheuristics, Risk Analysis, Sports Analysis and Transportation, among others. In total, the conference featured 3 Keynotes and 4 Medalists presentations and more

than 500 *technical paper presentations*, including more than 20 posters, reflecting the depth and diversity of research contributions. One working day, June 12, was devoted also to *Public Statistics* running in parallel with the Conference.

As a regular event conducted every one and a half years alternating spring and autumn seasons, the conference serves as a significant platform for academic discussions and interdisciplinary collaboration, contributing to advancements in *OR, Data Science, and Statistics*. The insights shared by experts and researchers are expected to drive innovative research, policy development, and practical applications. The conference program successfully highlighted emerging trends and laid the foundation for future research initiatives and partnerships aimed at optimizing sustainable solutions for global challenges. The social program was no less important, being a good opportunity for relaxing and networking among participants. The *Welcome Reception*, the cultural visits to main attractions of the city like the *Seu Vella*, and the banquet as the *Closing Activity*, including dancing, remain also in the memories of participants and stimulate attendance at the next *SEIO Conference* in Santiago de Compostela, September 2026. 🌐

ORSIS 2025 – another inspiring annual conference took place at Tel-Aviv

Noam Shamir <nshamir@tau.ac.il>

The 2025 ORSIS Conference was held on May 5–6, 2025, at Tel Aviv University (<https://www.orsis.org.il/conferences>), bringing together the Operations Research community for two days of stimulating discussions, collaboration, and innovation. The event was organized by Noam Shamir (Chair), Mor Kaspi, and Royi Jacobovic from Tel Aviv University, who curated a program that reflected the breadth and vitality of the field.

Plenary Lecture was presented by Prof. Andrea Lodi from Cornell Tech, who spoke on “Machine Learning Augmented Branch and Bound for Mixed Integer Linear Programming”.



▲ Naor Plenary Session delivered by Prof. Andrea Lodi.



▲ Plenary Session delivered by Prof. Noam Nisan.

This year's conference welcomed 116 participants from around the world, representing both academia and industry. Over the course of the event, 25 parallel sessions showcased cutting-edge research in optimization, data science, simulation, decision analytics, queuing systems, and supply chain management, highlighting the interdisciplinary nature of OR.

In addition to the keynote presentations, the conference featured four *semi-plenary speakers* covering a wide range of topics and a panel session on “OR in the age of AI: Opportunities and Challenges”. The panel inspired lively discussion on how artificial intelligence is reshaping the landscape of *operations research* and how the two disciplines can continue to evolve together.

The scientific program was anchored by two *keynote lectures*. Prof. Noam Nisan from the Hebrew University of Jerusalem delivered the *Plenary Lecture* titled “Transaction Fees on Blockchains: Some Algorithmic Investigations”, and the *Naor*

As part of the conference's tradition of recognizing excellence, the *Uriel Rothblum Award* for outstanding research in *Operations Research* and the *Abraham Mehrez Prize* for excellence in student research were awarded. These honors celebrated exceptional achievements and the promising future of young scholars in the Israeli OR community.



▲ Interactive social event.



▲ Panel discussion about OR in the age of AI.

The conference concluded with an interactive social event, giving participants a chance to connect informally, exchange ideas, and celebrate the strength of the ORSIS community. 🌐

Brazilian OR Symposium 2025 in Gramado: Challenges for Sustainable Innovation and Efficient Energy

Simone Martins <simone@ic.uff.br>

The 57th Brazilian Symposium on Operational Research (SBPO) took place in the pleasant city of Gramado, Rio Grande do Sul, from October 5 to 9, 2025, at the Master Gramado Hotel (<https://sbpo2025.galoa.com.br/sbpo-2025/page/5407-home>). The Federal University of Santa Maria (UFSM) organized the event with institutional support from the Federal University of Rio Grande do Sul (UFRGS) and the Santa Cruz do Sul University (UNISC). It was supported by funding organizations (CAPES, CNPq, FAPERGS, IFORS) and sponsored by private and public entities (Hexaly, Mercado Livre, Gurobi, Finor, Brazilian Navy, Casnav, Bauducco). The event reaffirmed its role as the most significant OR conference in Latin America.

With over 700 participants representing Brazil, Argentina, Australia, Chile, Germany, Switzerland, the United States, and Uruguay, SBPO 2025 showcased the diversity and vitality of the *Operational Research* community. Participation was predominantly academic, with students (undergraduate and graduate) making up 58% and professionals accounting for 42%.



▲ Closing technical session.

The event included 92 regular oral technical sessions covering 25 thematic areas in OR, eight poster sessions, five special sessions on key topics, four award sessions (Best Thesis, Best Dissertation, Scientific Initiation, and Best Paper), and two mini-courses. A total of 434 Full Papers, 84 Extended Abstracts, and 79 Abstracts are published



▲ SBPO 2025 Fellowship: Paulo França, Nair de Abreu, Annibal Sant'Anna, Maurício Resende and Reinaldo Morabito (from left to right).

in the Proceedings of SBPO 2025. Underscoring industry collaboration, an exciting challenge sponsored by Mercado Livre also took place, where three successful competitors received prizes.

The 2025 SOBRAPO Fellow Award honored five distinguished scholars in the area: Annibal Parracho Sant'Anna (UFF/Brazil), Mauricio G. C. Resende (DIMACS/USA), Nair Maria Maia de Abreu (UFRJ/Brazil), Paulo Morelato França (UNESP/Brazil), and Reinaldo Morabito Neto (UFSCAR/Brazil).

The *plenaries* were excellent! Alysson Costa (University of Melbourne/Australia) discussed his exciting meeting with Alison Doig, one of the creators of the branch-and-bound method. Anand Subramanian (UFPB/Brazil) shared some inquisitive and funny stories about his "Subject to" (s.t.) Podcast. Luciana Buriol (Amazon/USA) gave a fantastic panorama of Amazon fulfillment optimization. Luiz Barroso (PSR/Brazil) discussed renewable energies in Brazil and their challenges in an accessible manner. >>

>> *Rui Vicente Oppermann* (UFRGS and CAPES/Brazil) discussed how the Brazilian government is planning the internationalization of postgraduate studies in Brazil, aimed at the country's sustainable development.

Beyond the scientific sessions, *SBPO 2025* fostered meaningful connections and collaborations. The closing dinner and awards ceremony provided a memorable finale.

As *SBPO* celebrates its continuous growth and impact, we look forward to gathering again at the *58th SBPO*, to be held



▲ Closing dinner.

in Belo Horizonte, Minas Gerais, Brazil, in 2026. 🌐

A Vibrant Gathering of the Mexican OR Community in León, Mexico

Jorge R. Perez-Gallardo <raul.perez@imat.mx>, **Adrian Ramirez-Nafarrate** <adrian.ramirez@tec.mx>, **Rodolfo Mendoza-Gomez** <rodolfomendoza@tec.mx>



▲ Group photo of onsite participants and organizing committee.

The *XIII Congreso de la Sociedad Mexicana de Investigación de Operaciones, CSMIO 2025* (<https://sites.google.com/tec.mx/csmio-2025>), was successfully held on October 8-10, 2025, in *Tecnológico de Monterrey*, León, Mexico. This annual conference serves as one of the most important academic forums in Mexico, bringing together scholars, students, researchers, and professionals to explore advancements in *Operational Research and its applications*.

CSMIO 2025 fostered *scientific exchange and collaboration*, offering a platform to present research, share innovative ideas, and strengthen academic and professional networks. The program included plenary lectures, thematic sessions, and contributed talks covering a broad spectrum of topics such as mathematical modeling, optimization, decision-making under uncertainty, data analysis, logistics, and applications in industry and the public sector.

A highlight of the event was the participation of renowned *keynote speakers*: *Ignacio E. Grossmann* (Carnegie Mellon) presented the role of advanced optimization techniques in supply chains, *Julie Swann* (NCS University) discussed data, decisions and the drive to optimize health systems, *Luis E. Sucar* (INAOE) explore causal models in AI and OR, *Yasmin Rios* (Tecnológico de Monterrey) introduced quantum combinatorial optimizations, while *Christopher Mejia* (MIT) presented a case of applied interdisciplinary OR to tackle nutrition and food insecurity. Their presentations inspired meaningful discussions on how OR can provide innovative solutions to

address complex societal and industrial challenges.

Another key component of *CSMIO 2025* was the final phase of the competition for the *Award for the Best Theses in Operational Research*, recognizing outstanding academic work at the *undergraduate, master's, and doctoral levels*. This initiative continues to encourage excellence and the development of new generations of researchers in the field.

Through the dedication of its organizing and scientific committees, led by *Rodolfo Mendoza-Gomez* and *Adrian Ramirez-Nafarrate*, respectively, and the enthusiastic participation of the community, *CSMIO 2025* reaffirmed the *vital role of Mexico in the regional and global Operational Research community*. The congress also emphasized the importance of building strong collaborative networks between academia, industry, and government to advance the field and generate impactful solutions.

The conference concluded with an invitation to meet again at the *CSMIO 2026*, to be hosted by *Universidad de Monterrey (UEM)*, Monterrey, Mexico.

Many thanks to dear **Prof. José-Fernando Camacho-Vallejo** for the communication assistance that made this report possible. 🌐



▲ Keynote speakers (from left to right): Luis E. Sucar, Yasmin Rios, Ignacio E. Grossmann, Julie Swann and Christopher Mejia.

The Argentine Symposium on Industrial Informatics and OR 2025 Sets a Record for Presented Works

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The *Argentine Symposium on Industrial Informatics and Operations Research (SIIO)* is the premier event for the OR community in Argentina. Held annually, it serves as a vital forum for exchanging ideas, knowledge, and experiences. *SIIO* is a key component of the *Argentine Conference on Informatics (JAIIO)*, which has been organized by the *Argentine Society of Informatics and Operations Research (SADIO)* since 1961.

The 2025 edition of *SIIO* took place in Buenos Aires, Argentina, as part of the 54th edition of *JAIIO*. Following a rigorous selection process, 41 works were accepted for oral presentation during the two-day symposium.

The presentations covered a wide range of topics related to industrial informatics and OR, including theoretical studies, case studies, and practical applications, reflecting the diversity and rigour of current research in these fields. Three high-quality full papers were selected for the *Best Paper Award* of the symposium, including topics of forestry management, circular economy, and process engineering.

For detailed program information and further conference details, visit the *JAIIO* website: <https://54jaiio.sadio.org.ar/>. The next edition of *SIIO* will be held in 2026 in La Plata. We hope to meet many colleagues from the OR community there! 🌐



▲ Place of the Symposium: Pavilion Zero+Infinitum at Universidad de Buenos Aires (credit to <https://www.argentina.gob.ar/>).

National Meeting of OR Teachers (ENDIO) – OR Training School (EPIO) returned to Bahia Blanca (Argentina), where ENDIO was born

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Due to their federal character, the *ENDIO-EPIO* editions are held every year on a rotating basis in different universities of Argentina.

The 38th National Meeting of Operations Research Teachers and the 36th Operations Research Training School took place in Bahía Blanca (Argentina) during October 22-24, 2025, and was jointly organised by the Engineering Department of Universidad Nacional del Sur and EPIO (<https://www.epio.org.ar/>).

During the congress, researchers, professionals, teachers, undergraduate and postgraduate students from Argentina, Brazil, Colombia, Peru, Spain, and Uruguay, presented 50 contributions in parallel face-to-face and hybrid sessions, providing opportunities to promote meaningful knowledge exchange and collaboration among participants within a warm and welcoming atmosphere. Three conferences and two courses from notable speakers covering different topics were also part of the program:

Conference 1: “Category theory applied to scheduling



▲ *ENDIO-EPIO* business simulators hybrid course.

problems in Industry 4.0” by Prof. Fernando Tohmé, from Universidad Nacional del Sur (Argentina).

Conference 2: “Is operations research useful in Agriculture/Livestock 4.0?” by Prof. Lluís M. Plà Aragonés from the University of Lleida (Spain).

Conference 3: “Joint modeling of passenger car and freight routes combined with parking choices in congested urban settings” by Prof. Antonio Mauttone from the University of the Republic (Uruguay).

Course 1: “Authentic assessment and innovative tools in higher education” by Prof. Ana Clara Torres from Universidad Nacional de Tucumán (Argentina).

Course 2: “Implementation of business simulators for education” by Profs. Érica Milin, Silvia Quiroga, Hernán Martel, and Rubén Flecha



▲ Group photo of Hybrid XXXVIII ENDIO - XXXVI EPIO



▲ Bahía Blanca Adult Municipal Choir performance (below).

from Universidad Tecnológica Nacional, Facultad Regional Buenos Aires (Argentina).

The meeting also featured a social program including lunches, a welcome cocktail, and the traditional gala dinner, allowing participants to connect and get to know each other better. During the opening ceremony, the *Bahía Blanca Adult Municipal Choir* performance was enjoyed.

Many thanks to dear **Prof. Antonio Mauttone** for communication that make this report possible. 🌐

Experts Urge Nigeria to Harness OR at IORMS 2025 in Ibadan for National Growth

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The 10th Anniversary and the 6th Annual International Conference of the Institute of Operational Research and Management Science of Nigeria (IORMS) took place during October 14-16, 2025, at Lead City University (LCU; www.lcu.edu.ng), Ibadan, and provided space for celebrations, scientific debate, and reflection on a decade of professional excellence of IORMS in Nigeria. The theme of this year's conference was “Optimizing Nigeria's Development: Operational Research & AI as Catalysts”. The 3-day hybrid conference brought together leading academics, industry professionals, and researchers from across Nigeria and abroad to explore how Operational Research (OR) and Artificial Intelligence (AI) can serve as powerful tools for national transformation (www.iorms.org.ng).

On the first day, IORMS President, Idorenyin Etukudo, underscored the importance of bridging the gap between theory and practice in Nigeria's development process: “Sustainable economic development in Nigeria continues to elude us largely because of the wide gap between academic research and practical operations... There is a growing need for professionals to collaborate by exploring the intersection of Operational Research and Artificial Intelligence to address our nation's pressing challenges.” He traced the history of the Institute from its humble beginnings in 1983 under Funso Akingbade to its official registration in 2014 and inauguration in 2015. He emphasized that IORMS has remained a “springboard for professionals in engineering, science, management, and social sciences”, dedicated to using scientific methods for problem-solving and effective decision-making in organizations. Introduction of AI into OR methods would “enhance the accuracy of optimal solutions

and open new frontiers for innovation and development.”

The Vice-Chancellor of LCU, Kabiru Adeyemo, was honored with the IORMS Fellowship Award for his contribution to education and OR, and Jide Owioye, the Chairman of the Governing Council of LCU, received an Honorary Fellowship Award. The keynote speaker, Oladotun Fagbenle, urged Nigerians to harness the transformative power of AI and OR to drive progress and prosperity. Adedeji Badiru (Air Force Institute of Technology, USA) delivered an inspiring lecture on innovation and sustainable growth. Then Gerhard-Wilhelm Weber (Poznan University of Technology, Poland) joined virtually to present a plenary paper “Analysis of Finance–Human Factor Interaction Indicators”. Other distinguished participants included GOS Ekhaguere (University of Ibadan; IORMS Board of Trustees), Bola Dixon-Ogbechi (University of Lagos), Cynthia Orumie (University of Port Harcourt), Mumuni Adamu (University of Ibadan), Adebo Babatunde, and Olatunde Yara (Lead City University).



▲ The Governing Council (GC) of IORMS, flanked by some of the participants at IORMS 2025.

The *second day* featured a lecture by *Paula Carroll* (University College Dublin, Ireland), who discussed the role of “*Business Analytics and AI for Advancing the Sustainable Development Goals (SDGs)*”. Researchers also presented papers exploring the intersection of analytics, policy, and management innovation.

The *third day* featured a session led by *Justine Broihm* from Germany on using *GAMS* software for complex modeling, followed by a paper from *Christopher Thron* of Texas, USA, on “*Interactive AI for Accelerating OR Development*”. *Olabode Adewoye* took the participants on a panoramic view of belonging to *OR* societies and associations. He described some great opportunities that are available for attending *IFORS*, *EURO*, *IORMS*, and other *OR* societies’ programs.

A key highlight was the inauguration of *GLOW Nigeria* (*Global Leaders in OR: Women*) by the *International Federation of Operational Research Societies (IFORS)*, with *Bola Dixon-Ogbechi* being appointed as the leader of the initiative.

The *10th Anniversary* celebration included the presentation of a *Best Research Paper Award* in memory of the late founding President *Funso Akingbade*, presented by his daughter, *Adebimpe Adenike Ajelabi* (University of Lagos). The conference ended with the induction of new members, the conferment of fellowships, the *IORMS’ Annual General Meeting*, and a *Gala Night*. 🌐



▲ Excellencies, and team members of *IORMS 2025*, including Vice-Chancellor, *IORMS* President *Prof. Etukudo*, and *Prof. Ekhaguere*.

OR Education Workshop in Leeds: A Day of Curiosity, Collaboration, and Creativity

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The *OR Education Workshop* in Leeds, United Kingdom, took place at *University House, Beechgrove Room* - Saturday, June 21, as a *Satellite event* of *EURO 2025 Leeds*. The workshop brought colleagues together the day before the *EURO* conference for a full, hands-on program focused on teaching and learning in *OR/MS*. The atmosphere was energetic from the opening icebreaker to the collaborative closing, with insightful exchanges, inspiring presentations, and fresh ideas throughout the day.



▲ Presentations by participants of the *OR Education Workshop*.

How we started.

We opened by sharing our teaching challenges and triumphs - a candid exchange that set the tone for collaboration and peer learning. The conversation quickly surfaced practical ideas to try in class and highlighted common themes across contexts.

Practice & inspiration.

Engaging presentations showcased real classroom cases and concrete methods for teaching *OR* and *management science*. Colleagues presented approaches they have tested in their own courses, offering actionable takeaways and new perspectives educators can adopt immediately.

Publishing our successes.

A dedicated presentation outlined how to publish successes in *OR* education, encouraging colleagues to document and share evidence-based practice.

Building together.

We closed the day by co-creating and brainstorming new teaching tools in a collaborative lab. Participants worked in small groups to sketch activities and materials that can be refined and shared with the wider community in the months ahead.

It was a fantastic day of learning, laughter, and connection.

Further details and the original summary are available on the “*OR Education*” webpage:

<https://education.euro-online.org/2025/06/24/or-education-workshop-in-leeds-a-day-of-curiosity-collaboration-and-creativity/>.

You can also get the latest news by joining our *LinkedIn* group: <https://www.linkedin.com/groups/13261011/>. 🌐



▲ Group photo of the *OR Education Workshop*.

Satellite Event of EWG on Ethics and OR and International Society of Societal Complexity in cooperation with the 34th EURO Conference in Leeds, UK

Dorien DeTombe <doriendetombe@hotmail.com>



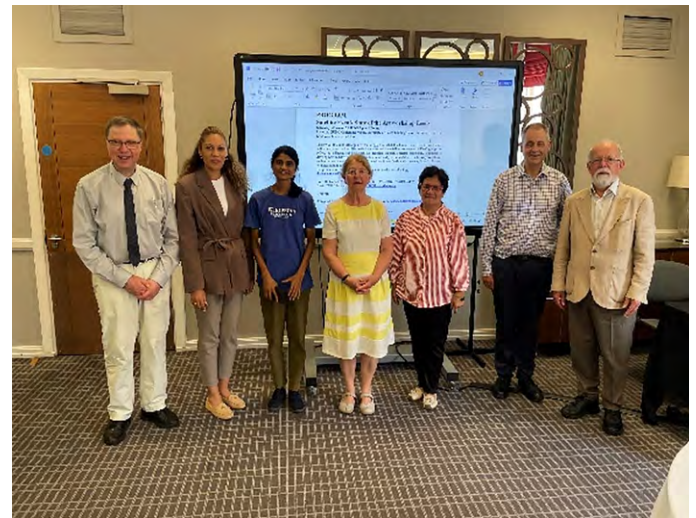
▲ Professor Dorien DeTombe and Professor Gerhard-Wilhelm Weber.

The Satellite Event of the EURO Working Group (EWG) “Ethics and OR” and International Society “Societal Complexity”, organized by Prof. Dr. Dorien DeTombe and Prof. Dr. Gerhard-Wilhelm Weber, took place - as always - one day before the EURO Conference started, this time in Leeds, UK, on Saturday, June 21, 2025 (see <https://euro2025leeds.uk/satellite-events>).

For this Satellite Event, chairs and leading scientists of other EWG groups were invited to reflect and discuss adjacent subjects in their own fields, such as decision support, sustainable development, and development in developing countries. There were twelve lectures presented in the Satellite Event, which were followed by vivid discussions.

Meeting this way, the attendees are able to discuss with each other highly interesting new developments and

questions in their own fields. These Satellite Events are highly appreciated among the colleagues of different EWGs who also attend the EURO conference. As always, these presentations, together with EURO 2025 presentations organized by EWG “Ethics and OR”, were published in a book of abstracts - the 42nd Book of Abstracts (see <http://www.complexitycourse.org/42DeTombeWeberEthicsORComplexityEngland2025.pdf>).



▲ The satellite event on “Ethics and OR” Leeds 2025.

This wonderful event concluded, as every year, with a communal dinner. 🌍

Centennial Meeting of the EURO Working Group on Multiple Criteria Decision Aiding, Celebrated in Poznań, Poland

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On 11-13 September 2025, Poznań University of Technology (Poznań, Poland) hosted the jubilee, 100th Edition of the EURO Working Group on Multiple Criteria Decision Aiding (EWG-MCDA). The group was founded in 1975 on the initiative of Professor Bernard Roy during the first European Conference on Operational Research (EURO) in Brussels. Its mission is to foster, at the European level, an original way of thinking in the field of MCDA, and to create a forum where members can present theoretical and applied results, subject their work to critical discussion, and establish collaborations. The community’s vitality and openness are sustained by *biannual meetings* - not mini-conferences but truly interactive gatherings that encourage exchange and the emergence of new ideas.

The centennial meeting took place at the *Działyński Palace* (home to the Poznań Branch of the Polish Academy of Sciences) and at the Lecture Center of Poznań University



▲ Meeting participants at the Poznań University of Technology.

of Technology. Its theme - “From memories to the future” - combined reflection on past achievements with discussion of challenges for the decades ahead. >>



▲ Group photo at the Old Market Square in Poznań.

>> Nearly 60 researchers participated, from Algeria, Belgium, Brazil, Canada, France, Germany, Greece, Italy, Poland, Spain, Switzerland, and the United Kingdom. Professor Miłosz Kadziński chaired both the *Organizing and Scientific Committees*.

A key element of the first day was a commemorative session chaired by Professor Roman Słowiński. Participants - representatives of different generations - shared stories of their engagement in the group's life, research collaborations, friendships formed, and hundreds of photographs spanning 50 years of EWG-MCDA. The scientific program comprised six sessions. The first featured a plenary lecture on multi-objective optimization methods and their application to portfolio optimization, delivered by

the 2025 Bernard Roy Award Laureate, Dr. Maria Barbati of Ca' Foscari University of Venice. The remaining sessions covered the theoretical (e.g., in value-, outranking-, and rule-based approach) and application-oriented (e.g., in energy, sustainability, and agriculture) contributions. The presentations sparked lively discussion and - importantly - will have a tangible impact on the development of MCDA in the years to come. Detailed program information is available at: <https://ewgmcda100.cs.put.poznan.pl/>.

During the meeting, after 18 years serving as one of the group's coordinators, Professor Roman Słowiński stepped down. In gratitude for his long service and in recognition of his pivotal role in strengthening the community's cohesion and international standing, he was awarded the title of *Honorary Chair of EWG-MCDA*. A new coordination team was also confirmed: Irene Abi-Zeid (Université Laval, Canada), Jose Figueira (University of Lisbon, Portugal), Salvatore Greco (University of Catania, Italy), and Miłosz Kadziński (Poznań University of Technology, Poland).

Hosting the centennial edition of EWG-MCDA in Poznań proved to be a great success - both organizationally and academically. Participants praised the high quality of the proceedings and the hospitality, which translated into new contacts, research initiatives, and inspiration for the years ahead. The group's next meetings are planned for Leeds (United Kingdom) and Zurich (Switzerland) in April and September 2026, respectively. 🌐

Anniversary Meeting EWGLA & IWOLOCA 2025 on Locational Analysis, Celebrated in Jerez de la Frontera, Spain

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The 30th Meeting of the EURO Working Group on Locational Analysis (EWGLA) was held in Jerez de la Frontera, Spain, September 17-19, 2025 (<https://ewgla2025.uca.es/>).

EWGLA meetings have become a vehicle for communication on location analysis and related topics for worldwide researchers. These meetings focus on models and methods for both theoretical and practical problems. In addition, EWGLA workshops combine a strong scientific program with a friendly atmosphere that encourages open exchange and collaboration.

This year, the 30th EWGLA Meeting took place together with the 14th International Workshop on Locational Analysis and Related Problems (IWOLOCA), organized by the Spanish Network on Locational Analysis and the Location Working Group of the Spanish Society of Statistics and Operations Research (SEIO).



▲ Plenary speakers of EWGLA 2025: Burcu Balçık, Anthony Papavasiliou, and Vladimir Marianov (from left to right).

Scientific Program. The 30th EWGLA has featured 69 contributed talks covering a broad range of areas, from classical topics such as discrete location, covering models, hub location and routing, to integrated problems in network design, together with a variety of interesting applications. This edition brought together 83 participants from 14 different European and non-European countries.

The current EWGLA edition featured three invited plenary speakers. Prof. Burcu Balçık (Özyeğin University) presented her work related to location and transportation problems in Humanitarian Logistics. >>



▲ Group photo of EWGLA 2025.

>> Prof. Anthony Papavasiliou (National Technical University of Athens) shared with us his advances in an EU-wide Power Generation Expansion problem, including renewable energy targets. Prof. Vladimir Marianov (Pontificia Universidad Católica de Chile) offered a personal retrospective on key topics in Locational Analysis.

Social Program. Social activities were indeed a great opportunity to strengthen connections among researchers. For the welcome reception, attendants visited a typical Andalusian *Casa-Palacio*. The social program also included a guided visit to one of the most famous wineries in Jerez. Participants attended a flamenco talk-workshop and a brief



▲ Social activities of EWGLA 2025.

live performance in a traditional *Peña Flamenca*. These social plans provided a great atmosphere for the conference.

Acknowledgments. The 30th EWGLA Meeting was possible thanks to the funding of the EWGLA from EURO, the GELOCA from SEIO, and the Spanish Agency of Research (AEI). The support of Universidad de Cádiz is also greatly appreciated. We are also grateful for the commitment of the organizing and scientific committees, which ensured the success of EWGLA 2025.

Many thanks to dear **Professor Elena Fernández** for the communication assistance that made this report possible. 🌐

22nd EU/ME Meeting x Quantum School 2025, in Kaiserslautern: from metaheuristics to quantum approaches

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The 22nd EU/ME meeting x Quantum School on Emerging Optimization Methods “From Metaheuristics to Quantum Approaches” was organized by the EU/ME Metaheuristics and EU/RO QUANTUM Operations Research groups in Kaiserslautern, Germany, from 10th to 12th September 2025.

The event was both a conference with sessions dedicated to researchers and PhD students, as well as a school to explore quantum computing. A particularly rare feature of the school was that it also included *practical workshops*.

We were fortunate to welcome *Frank Phillipson*, *Narendra Hegade*, and *Alexey Melnikov* for *plenary sessions*.

The *first day* provided an introduction to quantum computing, during which *Jean-Michel Torres* and *Pierre Jaeger* from IBM conducted the first practical workshop on quantum gates and their usage. On the *second day*, participants were able to code their first Grover’s algorithm with the help of *Eric Bourreau* and *Philippe Lacomme*, followed by a *workshop* on *Atos’ Qaptiva technologies*. The second day also featured a session dedicated to *PhD students* (led by *Dimitri Papadimitriou*) and a session for researchers, led by *Pascal Halffmann*.

It is worth mentioning the participation of “*Pasqal*”, which organized a workshop on their technology in the early afternoon.



▲ A photo of participants.

The third day allowed for deeper exploration of the previous concepts and concluded with a visit to the university’s quantum computer, which generated significant interest.

Throughout the conference, participants had the opportunity to take part in *Jean-Michel Torres’* humorous quizzes, and for some of them, to win goodies from the EURO Working Group.



▲ Anita Schöbel for the opening ceremony.



▲ The quantum cap.

The event is organized by: Marc Sevaux, Caroline Prodhon, Eric Bourreau, Philippe Lacomme, Gerard Fleury, Anita Schöbel (all four are members of the Executive Committee of the EWG Quantum OR), Alexey Bochkarev (RPTU Kaiserslautern-Landau), Pascal Halffmann (Fraunhofer ITWM).

fr/~lacomme/EUME_JE2/EUME_Joint_Event.php.

If you are interested in quantum computing for optimization, find us at: <https://quantum-or.euro-online.org/>. The next event is expected to take place in two years, in 2027. If you are interested in hosting the event, please contact us. 🌐

Find the event on the website: <https://perso.isima>.

Exchanging ideas and perspectives on the ever-evolving retail operations: 8th Annual Meeting of the EWG on Retail Operations in Barcelona

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From October 1st to 3rd, 2025, the 8th Workshop on Retail Operations took place at the campus of IESE in Barcelona, Spain (<https://www.iese.edu/faculty-research/ewg-retail-operations-annual-meeting-2025/>). The event, expertly organized by Laura Wagner and Victor Martínez de Albéniz, brought together more than 70 participants from Europe, the US, and Asia, all focused on the latest scientific advancements and innovations in retail operations. The community of the EURO Working Group on Retail Operations (<https://www.ewg-retail-ops.eu/>), led with great commitment by Alexander Hübner and Pedro Amorim, ensured, as always, a friendly atmosphere for everyone that enabled many fruitful discussions and interactions. Over the period of two days, 11 regular presentations and 19 poster presentations covered a wide range of different topics, including omni-channel optimization, returns management, and emerging retail technologies. It was an excellent opportunity to exchange ideas and gain fresh perspectives on the evolving landscape of retail operations.

The workshop kicked off on Wednesday evening with a walking tour through Barcelona's city center and a dinner by the sea in Barceloneta, introducing the participants to the local cuisine and hospitality. Thursday started off with plenary talks, poster presentations, with a special highlight



▲ The crowd at this year's meeting.

being the keynote talk by Kalyan Talluri on "Challenges in Automated Pricing". In the evening, participants were treated with an amazing conference dinner in town, where another highlight was waiting for the conference participants: the handing out of the second Lifetime Award in Retail Operations. This year's award has been given to Heinrich Kuhn (Catholic University of Eichstaett-Ingolstadt) for his visionary force and foundational role in creating and establishing the EURO Working Group on Retail Operations in 2015. >>

Through his career, *Heinrich* has shaped both academia and industry, with over 50 peer-reviewed papers and more than 100 publications in total.

The *Retail Operations Doctoral Dissertation Award*, which was also awarded at the conference dinner, has been given to *Ayse Cetinel*, and this year's runner-up went to *Mert Cetin*, for their theses on the role of “*Stores in an Omnichannel World*” and the “*Anatomy of Omnichannel Retail: Stores, Products, and Returns*”, respectively.

Thank you to all participants who contributed to making this year's meeting such a great success. We are looking forward to the 9th Annual Meeting of the EURO Working Group on Retail Operations, hosted by *Susana Relvas* and team in Lisbon, Portugal, from September 23rd to 25th, 2026. 🌐



▲ European Lifetime Award in Retail Operations winner: *Heinrich Kuhn* (second from left).

The 2nd EURO PhD School “Data Science Meets Combinatorial Optimization” – Successfully held in Eindhoven, The Netherlands

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Organized by the *EURO Working Group “Data Science meets Optimization”*, its second *EURO PhD School* was held at Eindhoven University of Technology, from 25 August to 29 August. The PhD school welcomed over 40 PhD candidates from all over Europe to explore the interface between data science, machine learning, and combinatorial optimization. *Professor Yingqian Zhang*, together with her co-organizers *Yi-Ming Yong*, *Igor Smit*, and *Xia Jiang*, made it a great success. The full program is at <https://sites.google.com/view/phd-school-dso-2025>.

Combinatorial optimisation problems (COPs) are often NP-hard. Recent advances in machine learning (ML) have begun transforming how these problems are addressed by identifying patterns in problem instances, predicting algorithm performance, and learning to generate high-quality solutions. At the same time, optimisation techniques play a key role in making AI systems more transparent, robust, and fair. The school's primary goal was therefore to equip early career researchers with state-of-the-art integrated methods and tools from both fields and create networking opportunities for future collaboration.

Over five days, participants engaged in a combination of lectures, hands-on exercises, and student presentations. Each day featured a leading expert delivering a lecture on cutting-edge methods, including: *Carola Doerr* (Sorbonne University) on Black-Box Optimisation, *Kevin Tierney* (Bielefeld University) on Deep Reinforcement Learning for Vehicle Routing Problems, *Kate Smith-Miles* (University of Melbourne) on Instance-Space Analysis, *Pieter Smet* (KU Leuven) on Uncertainty in Optimisation, and *Sicco Verwer* (TU Delft) on Learning Optimal, Robust Decision Trees.

The week also included the symposium “AI meets Optimisation”, where invited speakers from academia and industry discussed state-of-the-art research and

applications at the intersection of AI and OR, including: *Ilker Birbil* (University of Amsterdam), *Zaharah Bukhsh* (TU Eindhoven), *Wim Nuijten* (TU Eindhoven), *Michael Römer* (Bielefeld University), *Neil Yorke-Smith* (TU Delft), *Yaoxin Wu* (TU Eindhoven), *Pavel Troubil* (Dassault Systèmes), and *Cynthia Luijkx* (ORTEC).

This event was sponsored by *EURO* (the *European Association of Operational Research Societies*), together with several local organizations and companies, including TU/e, NWO (Dutch Research Council), *SIKS* (Dutch Research School for Information and Knowledge Systems), *VVSOR* (Netherlands Society for Statistics and Operations Research), *Dassault Systèmes*, and *Ortec*.

Students were immersed in a variety of advanced subjects largely covering the interaction between the research domains. Young PhD students met in discussions on science as well as on research culture at different universities, in close interaction with experienced researchers, while lecturing or presenting, during the guided tour through Eindhoven, at the social dinner, or simply at a coffee break, making the school an experience for life. 🌐



▲ The students together with some of the lecturers at the first day of the school.

2025 APDIO Workshop on Teaching OR in Lisbon – Hands-On Edition

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“Let’s make OR irresistible” was the motto of the APDIO Workshop on Teaching Operational Research – Hands-On Edition, which took place on June 6, 2025, at Instituto Superior Técnico (IST), Lisbon, hosted by CEGIST. Organized by the Portuguese Association of Operational Research (APDIO), this unique event gathered more than 35 educators from universities and polytechnic institutes across Portugal, all sharing a common goal: to rethink and revitalize how Operational Research (OR) is taught.

A collaborative and practical approach:

The workshop was designed as a fully interactive and collaborative experience. Participants were encouraged to prepare beforehand, share their teaching challenges and successes, engage in critical reflection, and co-create innovative practices ready to be applied in their classrooms. The structure of the day reflected this vision: lightning pitches to highlight “pains and gains” in teaching OR, a round table to reflect on different approaches, and hands-on labs where new pedagogical strategies were designed collectively. The result was an energetic atmosphere of experimentation and openness. Each participant left not only with a stronger network of peers but also with a concrete set of tools and ideas to test in their own institutions.

Workshop program:

Lightning Pitches - “Teach me your pains (and gains)”: Educators presented short, three-minute insights into their teaching experiences, raising questions around student motivation, balancing theory and practice, large class management, and assessment strategies.

Round Table - “What if we taught OR differently?”: A panel of experienced educators explored

recurring challenges and debated the integration of new methods and technologies, including the role of artificial intelligence in teaching and assessment. The discussion reinforced the importance of modeling skills and the need for assessment methods that value understanding over

mechanical execution.

Hands-On Labs - “Reimagining OR courses”: In the afternoon, participants collaborated in small groups to design innovative practices. Selected topics included project-based learning, gamification, software and simulation integration, introductory activities for OR, and the use of AI tools in education. Each group developed a structured proposal and presented it in a final session, “OR hacks in 180 seconds”.



▲ Group photo of 2025 APDIO Workshop on Teaching OR in Lisbon.

Innovative pedagogical practices:

The group work produced a set of creative strategies that reflect the richness of perspectives within the community. Among them were activities with project-based learning with external partners, gamified learning systems, the proposal of a collaborative case library for OR, hands-on activities to help visualize key concepts and algorithms, and ways to integrate generative AI tools as allies in teaching, while promoting critical reflection on their outputs. These proposals, while diverse in format and focus, shared a common aim: making OR more engaging, relevant, and inspiring for students.

Building community and looking ahead:

This workshop was integrated in a series of broad-band workshops organized by APDIO. It confirmed the value of creating spaces where educators and researchers can learn from each other through openness, creativity, and mutual support. The prototypes generated during the day are not final products but starting points: concrete enough to be tested and flexible enough

to be adapted. All participants left with renewed energy, a stronger sense of belonging to a collaborative community, and the shared conviction that OR can, and should, be taught in ways that are irresistible to



▲ During the sessions at the 2025 APDIO Workshop on Teaching OR in Lisbon.

students.

The full workshop report, with detailed descriptions of the activities and pedagogical practices, is available at apdio.pt/eventos. 

Shaping Solutions for a Better Tomorrow – with OR: AI-OPT 2025 Celebrated in Melbourne

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The 2025 Workshop on AI-based Optimisation (AI-OPT) was proudly hosted by OPTIMA in collaboration with the School of Computing and Information Systems, University of Melbourne, at the Manhari Room, Melbourne Connect. This year, AI-OPT spanned two full days from the 7th to the 8th of August, welcoming over 60 participants across diverse fields and institutions (<https://optima.org.au/2025-workshop-on-ai-based-optimisation-ai-opt-2025/>). Now in its third installment, the annual workshop continues to serve as a valuable platform for researchers and academics to share insights, address current challenges, and foster meaningful collaborations in the rapidly evolving field of AI-based optimization and Operational Research (OR).

Notable highlights include a spotlight talk on “Sliding Window Evolutionary Multi-Objective Algorithms for Constrained Single-Objective Optimisation” by Prof. Frank Neumann and a presentation by Taha Ozair Osman on “Focused Learning: Improving PINN Convergence for Parameter Estimation via Selective Residual Cycling”. The workshop also featured more in-depth presentations by emerging researchers, namely Ishara Hewa Pathirana, with her presentation on “Evolutionary Bi-Objective Optimisation for the Stochastic Multiple Knapsack Problem in Dynamic Environments”. Amir

Fayaz Heidari also delivered an impressive presentation on “Enabling Renewable Growth Through Inertia Markets: Game Theoretic Approach”.

The workshop's comprehensive program was carefully curated by the organising committee, led by Dr Aneta Neumann (The University of Adelaide), Dr Sergey Polyakovski (Deakin University), and Assoc. Prof. Hemant Singh (University of New South Wales), not forgetting OPTIMA's pivotal role in

overseeing the operations and logistics of the event under Dr Charlotte Hurry's leadership. During the two days, there was a strong

emphasis on supporting early career researchers through sessions led by invited guests, Prof. Xiaodong Li (RMIT University) and Prof. Andreas Ernst (Monash University), on ECR funding and pathways to industry collaborations. Beyond the formal program, the workshop also provided ample opportunities to network over light lunches and coffee breaks.

AI-OPT 2025 was a resounding success, leaving participants more inspired to continue advancing the AI-based optimisation field. OPTIMA looks forward to welcoming the community in future events for more productive exchanges and collaborations. 🌐



▲ Group photo with AI-OPT 2025 participants.

Participants attentively listening to presentations.

Back to the source for the 12th Conference on Graphs and Optimization: GO XII 2025 in Leukerbad (Switzerland)

Marino Widmer <marino.widmer@unifr.ch>

After a getaway to Jacques Brel's beloved Flat Country for the 11th edition in 2023, the GO (Graphs and Optimization) conference came back to its birthplace: the Swiss Alps (this year in the charming village of Leukerbad), from June 29 to July 3, 2025. A complete historical review of this set of conferences is available in the IFORS Newsletter, volume 18, no. 4, December 2023 (pp. 25-27).

Masterfully organized by Alain Hertz (Polytechnique Montréal, Canada), Bernard Ries (University of Fribourg, Switzerland) and David Schindl (Haute Ecole de Gestion, Geneva, Switzerland), with the efficient assistance of Elise Bangerter and Nour Elhouda Tellache (both from the University of Fribourg), this 12th edition welcomed 43 researchers from 12 different countries (Belgium, Canada, France, Germany, Italy, Japan, Poland, Slovenia, Spain,

Switzerland, Turkey and United States of America) to celebrate two honorary guests: Claudia Archetti (University of Brescia, Italy) and Chinh Hoang (Wilfrid Laurier University, Canada), two well-known researchers in our scientific community.

The plenary lectures given by Claudia Archetti (“Branch-and-cut algorithms for colorful components problems”) and Chinh Hoang (“Coloring graphs characterized by forbidden induced subgraphs”) were the highlights of a rich and attractive scientific program in which 34 other specialists, a good mix of experienced ones and beginners, presented the latest results of their fruitful research. The magic formula for this highly successful conference was two-thirds of talks on graphs (theory and applications) and one-third on optimization problems, thus perfectly justifying the generic title ‘GO’.



▲ Claudia Archetti tackled three optimization problems in which a colored graph, where each node is assigned a color, must be partitioned into colorful connected components.

As usual, the *social program* was not neglected by the organizers: participants had the opportunity to admire the magnificent Alpine landscape during the welcome party, to enjoy an excellent barbecue after a relaxing walk, and to appreciate an aperitif in the thermal baths before tasting the traditional *raclette*. On the last evening, a memorable banquet took place at the Gemmi mountain pass (altitude of approximately 2'350 meters / 7'710 feet) delighted all participants, both for the wonderful view and for the food, drinks,



▲ Chinh Hoang convinced the audience of the keen interest in graph coloring whose forbidden list L contains basic graphs such as induced paths, induced cycles, and their complements.

and entertainment prepared by several of the guests to pay tribute to the two jubilarians.

All participants send their warmest congratulations to the organizers, and they all want to know when and where the next GO will take place! 🌐

The 2025 Mixed Integer Programming Workshop – MIP Returns to Minnesota

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The *2025 Mixed Integer Programming Workshop (MIP 2025)* was held June 2-6, 2025, at the *University of Minnesota Twin Cities*, returning to Minneapolis after twenty years. *MIP 2025* featured (1) a single track of 19 *invited experts*, (2) a *summer school* preceding the main workshop, (3) the traditional *student poster session*, (4) a special session for the fourth edition of the *MIP computational competition*, and (5) a set of *contributed flash talks*. The scientific program was complemented by time set aside for socialization and collaboration, through sponsored breakfasts, tea/coffee breaks, long lunches, and organized group dinners.

MIP 2025 had 130 registered participants (including 56 students) coming from 4 continents and 13 countries. The invited speakers represented academic, national laboratory, and industry research and covered a broad range of recent advances from theoretical, computational, and applied topics. Per tradition, over 50% of the presenters were early-career researchers. The summer school offered in-depth tutorials for the nearly 80 attendees on numerical optimization, column generation, and structured MINLPs by Philipp Christophel (SAS Institute Inc.), Ricardo Fukasawa (University of Waterloo), and Andrés Gómez (University of Southern California).

The *MIP 2025 poster session*, with 29 students presenting their work, was held concurrently with a reception and

beautiful views from the Campus Club on the 4th floor of Coffman Memorial Union. The poster committee recognized two *honorable mentions*, Dahye Han (Georgia Tech) and Matheus Jun Ota (University of Waterloo), and gave the *best poster award* to Matias Villagra (Columbia University) for his work “*Symmetries and Lift-and-Project Hierarchies*”, which was also voted the *most popular poster* by attendees. Congratulations to Dahye, Matheus, Matias, and all poster

presenters, and thank you to the poster committee - chaired by Weijun Xie (Georgia Tech) - for their service!

This year, the computational competition was renamed to the *Land-Doig MIP Competition* in honor of Ailsa H. Land and Alison G. Harcourt (née Doig) for their contributions to integer programming, such as developing the branch-

and-bound method. The topic of the 2025 competition was *Quadratic MIP Primal Heuristics*. The winning team was Gioni Mexi, Deborah Hendrych, Sébastien Designolle, Mathieu Besançon, and Sebastian Pokutta for their submission “*A Frank-Wolfe-Based Primal Heuristic for Quadratic Mixed-Integer Optimization*”. Honorable mentions were given to Yongzheng Dai and the team of Suri Liu and Stefan Minner. Congratulations to all the winners! And thank you to the computational competition committee, chaired by Jan Kronqvist (KTH Royal Institute of Technology), for making the competition a success.



▲ Group photo of MIP 2025.

A new initiative at MIP 2025 was the solicitation of contributed “flash talks” by “nonstudents” (those ineligible for the poster session), which added eight technical talks to the program and created new opportunities for participation and knowledge exchange at the workshop.

MIP 2025 was kept affordable with the support of *academic, industry, and federal sponsors* that are listed on our website, including grants for student travel expenses from the National Science Foundation, Air Force Office of Scientific Research, and Office of Naval Research.>>

>> A big thank you also to the local host and team from the Department of Industrial and Systems Engineering at the University of Minnesota, chaired by *Jean-Philippe Richard* and coordinated by *Emily Rice*, for the smooth organization and operation of the workshop.

Visit <https://mixedinteger.org/2025> and see the [program book](#) for presenter information, accepted posters, talk slides, event photos, and more. And we hope to see you next year at [MIP 2026](#), which is planned for May 18-21, 2026, at the *University of Connecticut's* Stamford campus. 🌐

OR and IT for a Complex World: SEMIT 2025 Dubai, UAE

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The 5th International Conference on Science, Engineering Management and Information Technology 2025 (SEMIT 2025; cf. <https://semit2025.refconf.com/>) took place in hybrid format on September 11-13, 2025, in Dubai, UAE. The event brought together scholars and practitioners to share knowledge, experience, and expertise in *Operational Research (OR)* and *Information Technology (IT)*. With the scientific support of 21 universities worldwide, SEMIT 2025 emphasized the critical role of OR and IT in solving complex problems and supporting effective decision-making in today's challenging global context.

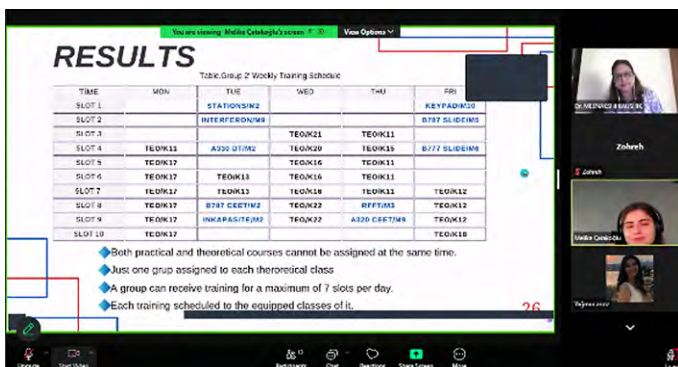
Conference Chairs were Prof. A. Mirzazadeh and Prof. Babek Erdebilli; Technical Program Chairs were Prof. Gerhard-Wilhelm Weber, Dr. Zohreh Molamohamadi, and Dr. Erfan Babaee Tirkolaee. Conference Coordination was managed by Ms. Leila Chehreghani, Dr. Zohreh Molamohamadi, Ms. Saina Sahragard, and Ms. Elahe Reeyazati. SEMIT 2025 also received strong institutional support from Ankara Yildirim Bayezit University (<https://aybu.edu.tr/aybu/en>), and its leadership, including Prof. Ali Cengiz Köseoğlu (Rector), Prof. Abdullah Yildiz (Vice Rector), Prof. Mete Gundogan (Department Head of Industrial Engineering), and Prof. Ergün Eraslan (Dean of Faculty of Engineering and Natural Sciences).



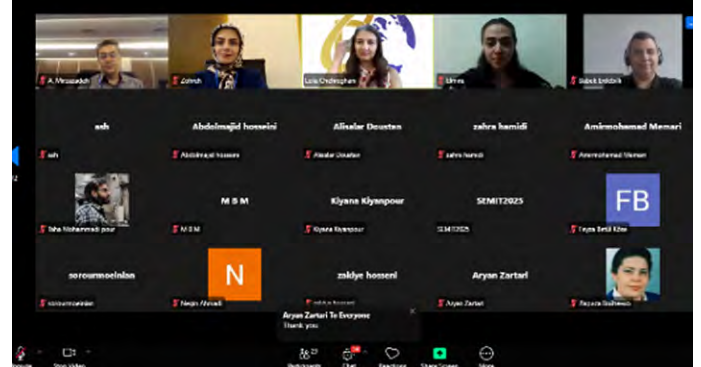
▲ Prof. A. Mirzazadeh, Chair of SEMIT 2025, presenting the conference report in the Opening Session.



▲ Group photo with some of the in-person participants.



▲ A paper presentation session.



▲ Group photo with online participants at the Closing Session.

The conference attracted committees from 31 countries, and the scientific program featured 19 paper presentation sessions and 9 invited talks. *Keynote speeches* were delivered by leading scholars: Prof. Dursun Delen (USA): “Demystifying Data Science”, Prof. Josef Jablonsky (Czech Republic): “Ranking Models in Data Envelopment Analysis”, and Prof. Sadia Samar Ali (Saudi Arabia): “A Novel Hybrid Decision-

Making Natural Resource-based Framework for Measuring Circular Economy 4.0 Performance for Textile Industry”.

Selected papers from SEMIT 2025 are published in Springer's CCIS book series (indexed in Scopus, SCImago, EI-Compendex, etc., and the other papers will be considered for possible publication in peer-reviewed Journals. 🌐

The 3rd SIAM Conference on Applied and Computational Discrete Algorithms: ACDA25, Celebrated in Montreal

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The *Third SIAM Conference on Applied and Computational Discrete Algorithms (ACDA25)* took place in Montreal, Quebec, Canada, from July 30 - August 1, 2025. The ACDA25 conference was organized by SIAM under the auspices of its *Activity Group on Applied and Computational Discrete Algorithms*, and co-located with the *Joint Annual Meetings of SIAM* and the *Canadian Applied and Industrial Mathematics Society (CAIMS)*. ACDA25 and the earlier ACDA conferences included in their scope applications of discrete mathematics and algorithms across computer science, data science, artificial intelligence, engineering, the physical sciences, and life sciences.

ACDA25 featured five plenary talks:

(i) *Sepehr Assadi* (Waterloo University, Canada) on finding large matchings in dynamic graphs via extremal graph theory. He described a novel approach for maintaining large matchings in dynamic graphs, where edges are continuously inserted and deleted. The novel approach blends extremal graph theory and algorithmic reasoning, and thus opens up new research directions.

(ii) *Giulia Guidi* (Cornell University, USA) on overcoming parallelism challenges in data analytics using sparse linear algebra. She described how sparse linear algebra can be used as an abstraction layer in high-performance computing systems, and argued that such an approach provides programming flexibility and productivity while ensuring high system performance in tackling irregular and communication-intensive data analysis applications.

(iii) *Charles Leiserson* (MIT, USA) gave a joint talk with the SIAM Annual Meeting entitled “*Setting a course for post-Moore software performance*”. He described software performance engineering (SPE) as the science and art of making code run fast or otherwise limiting its consumption of resources. He argued that SPE should be established as a science-based discipline alongside other areas of computer science and be taught widely.

(iv) *Gonzalo Navarro* (University of Chile) talked about “*Adaptive dynamic bitvectors*”, describing a particular data structure for rank and select queries in bitvectors while supporting updates. Given a position in the bitvector, a rank query returns the number of 1-bits before that position. A select query, given a parameter j , returns the location of the j^{th} 1-bit. Updates can be inserting a bit, deleting one, or setting the value at a given position to 0 or 1. He described how the new representation uses asymptotically optimal space while allowing fast update time.

(v) *Cynthia A. Phillips* (Sandia National Labs, USA) gave a talk entitled “*ACDA: When the First “A” Comes First*”. She described two real-life applications in detail where the needs of applications drive algorithm research. One of the applications involves reducing false negatives in data streams, and the other one delves into rendering open social-network datasets more real-life like for enabling algorithms. Further applications that raised algorithmic challenges in sensor placement in water networks are also described.

The program also featured the *SIAM ACDA Early Career Prize Lecture* by *Alex Conway* (Cornell Tech) on algorithms for solving computer system design problems. Two invited *minitutorials* were organized by *Jakub Lacki* (Google Corporation, USA) on *Scalable and Practical Graph Clustering*, and *Quanquan C. Liu* (Yale, USA) and *Vaidehi Srinivas* (Northwestern University, USA) on “*Learning augmented algorithms*” and complemented the forty talks of the program. The conference also had proceedings containing 24 full-length papers selected after a weak double-blind review process.

We are looking forward to the next ACDA conference to be held in Spring 2027, and invite the *Operations Research* community to participate! 🌐

The 42nd International Symposium on Military and Defence OR: Strengthening Global Defence Operational Research Links in Southampton

Noel Corrigan, Events Committee <noel.corrigan@ntlworld.com>

The *42nd International Symposium on Military and Defence Operational Research (ISMOR42)* was held from 15 to 17 July 2025 at the *National Oceanographic Centre*, Southampton. Over 100 delegates from 10 countries and 30 organisations attended, including representatives from defence

ministries, NATO agencies, and leading firms such as Google, BAE Systems, Leonardo, MBDA, and Sirius Analysis. Hosted by *The OR Society's Defence SIG*, the symposium brought together military analysts, academics, and industry experts to address contemporary *defence* and *security* challenges.

The three-day programme featured a keynote from *Brig (Ret'd) Austen Pearce* (Dstl) on how the character of conflict shapes Force Design, alongside 26 technical sessions, three panels, and eight workshops covering AI, modelling, logistics optimisation, force planning, and strategy-gaming. Workshops on “soft” and “hard” OR approaches offered new ways to address non-quantifiable factors in military planning.

This year's highlights included two *Eugene Visco Award*-winning presentations from the *US MORS*, reinforcing the strong transatlantic collaboration central to *ISMOR*. The *David Faddy Prize* went to *Mike Walker* (Sagentia) for his outstanding paper on CBR site decontamination, while *April Tieu* (DSTG Australia) received the *Eugene Visco Prize* for early-career analysts.



▲ Impressions of “Workshop on Strategy Gaming” and Catch-up Meeting after the conference (from left to right).

Lively social events, generously supported by industry sponsors, complemented the academic programme. *Alan Robinson* delivered the *Ronnie Shepherd Memorial Address* with wit and practical advice for analysts.

With its blend of rigorous research, practical applications, and international collaboration, *ISMOR42* once again proved pivotal for the global defence OR community. Presentations will soon be available via *The OR Society's Defence SIG* webpage. To stay involved, join the Defence SIG [here](#) and keep an eye on the [ISMOR webpage](#).

Many thanks to dear **Sarah Davis** and dear **Sarah Parry** for the communication assistance that made this report possible. 🌐

BOOK REVIEW

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Network Design with Applications to Transportation and Logistics

Edited by **Teodor Gabriel Crainic, Michel Gendreau, Bernard Gendron**

Springer Nature Switzerland AG

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OR-MS - Network Design

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This book edited by *Teodor Gabriel Crainic, Michel Gendreau* and *Bernard Gendron* presents a didactic as well as scholarly combination of network design problems, methodologies, models, and algorithms with specific applications to transportation and logistics. This book is an outcome of more than ten years of dedicated efforts of the authors to bring out “definitive work” on network design in transportation and logistics, and to bring together experts in different subjects in this area. Specifically, this book deals with network design problems, as well as models and algorithms to solve them, through techniques derived from network optimization, Linear Programming (LP), Mixed-Integer Linear Programming (MILP), metaheuristics, and large-scale optimization. Since network design problems predominantly have their applications in transportation and logistics, it form the cornerstone of this book. However, many problems, models and algorithms, including other important areas such as telecommunication and

manufacturing, have also been incorporated.

This book is divided into three parts. **Part I**, entitled “*Basic Problems and Models*” focuses on models and algorithms for fixed-charge network design problems, which primarily deal with the typical objective function that involves fixed design costs and variable flow costs. These problems are otherwise assumed to be deterministic and their structure to be relatively “simple,” typically including only flow conservation and capacity constraints. **Part II**, entitled “*Advanced Problems and Models*” is dedicated to network design problems and models that involve more complex objective functions and constraints, including non-linear objective functions, topological constraints, and uncertain data. **Part III**, entitled “*Applications in Transportation and Logistics*” addresses network design problems encountered in the areas of transportation and logistics, including both people and freight transportation by all modes.

This volume may be useful not only to researchers specializing in the relevant domains but also to graduate students in operations research, management science, analytics, and related disciplines. All the contributing authors have devoted particular attention to ensuring clarity and pedagogical coherence throughout the chapters. To maintain readability, the main body of each chapter contains only a limited number of citations. Instead, a dedicated section of bibliographical notes is provided at the end of each chapter, summarizing its key content, outlining the historical development of the topic addressed, and directing the reader to further references for in-depth study. It is assumed that readers possess a foundational knowledge of Linear Programming (LP) and Mixed-Integer Linear Programming (MILP), including exposure to linear network flow problems. More advanced subjects - such as mathematical decomposition techniques (including Lagrangian duality and Benders decomposition) and metaheuristics - are discussed in selected chapters. While these topics are presented with sufficient depth to render the exposition self-contained, readers seeking a more comprehensive understanding would benefit from reading the articles and books that are referenced in these chapters.

A brief overview of the twenty chapters of the book follows:

Chapter 1 - Basic Design Problems

by Teodor Gabriel Crainic, Michel Gendreau, and Bernard Gendron sets the stage for the remaining chapters of the book. It introduces the readers to network design problems, their origin and evolution, their combinatorial nature and the complexity of their objective functions and constraints. It, thus, provides a strong background as to why solving them involves approaches from several areas of combinatorial optimization and mathematical programming. This is followed by a discussion regarding the contents of the book, a section about the Bibliographical Notes and concludes with Conclusion and Perspectives about solving network design problems and their applications to transportation and logistics.

Chapter 2 - Fixed-Charge Network Design Problems by Teodor Gabriel Crainic, Michel Gendreau, and Bernard Gendron introduces models using arc-based binary variables to capture design decisions with fixed costs. It classifies problems by demand type, arc capacities, and transportation costs, leading to variants of varying complexity. The chapter also discusses key modeling approaches like path flow formulations and cut-set-based inequalities.

Chapter 3 - Exact Methods for Fixed-Charge Network Design by Teodor Gabriel Crainic and Bernard Gendron explores

exact algorithms for single- and multicommodity fixed-charge network design, known for their strong NP-hardness. It highlights decomposition methods that exploit subproblem structures and is organized into three parts: relaxations for better lower bounds, enumeration algorithms, and heuristic and parallel methods for large-scale problems.

Chapter 4 - Heuristics and Metaheuristics for Fixed-Charge Network Design by Teodor Gabriel Crainic and Michel Gendreau explores heuristic and metaheuristic methods used to solve complex network design problems. It outlines key concepts such as search spaces and neighborhoods, and presents major approaches including constructive, local search, population-based, and matheuristic methods. The chapter also highlights their applications to fixed-charge transportation and multicommodity problems, offering historical insights and future research directions.

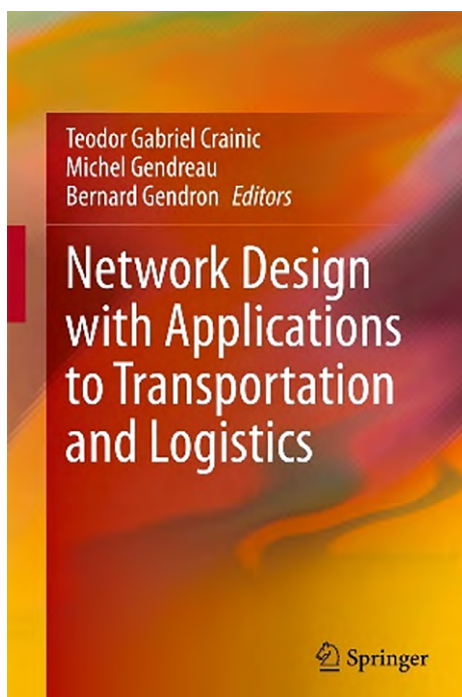
Chapter 5 - Multicommodity Multifacility Network Design

by Alper Atamtürk and Oktay Günlük examines models where arc capacities are expanded using multiple facilities with varying capacities, common in supply chain, service, and telecommunication networks. It highlights the use of valid inequalities and cutting planes to solve large-scale problems and reviews key advances in polyhedral theory. The chapter focuses on three main techniques - metric inequalities, mixed-integer rounding, and network reduction - along with fundamental inequalities

useful for robust and survivable network design.

Chapter 6 - Piecewise Linear Cost Network Design by Antonio Frangioni and Bernard Gendron addresses extensions of basic network design models to better represent real-world situations where arc capacities have complex, non-binary costs. It explains how capacity costs can be approximated using piecewise linear functions, balancing accuracy and model size. The chapter examines both general and specific cases, showing that tighter LP relaxations increase variable counts, and presents efficient techniques for solving large-scale piecewise linear cost network design problems.

Chapter 7 - Topology-Constrained Network Design by Bernard Fortz, explores long-term network planning when demands are unknown, focusing on minimizing fixed link-opening costs while ignoring capacity and routing costs. The chapter addresses topological constraints to ensure connectivity and survivability, covering minimum spanning tree design, networks with node-disjoint paths for fault tolerance, and models with bounded path lengths using hop constraints or cycle coverage.



▲ OR-MS – Network Design.
Source: <https://link.springer.com/book/10.1007/978-3-030-64018-7>.

Chapter 8 - Network Design with Routing Requirements by *Anantaram Balakrishnan, Thomas L. Magnanti, Prakash Mirchandani, and Richard T. Wong* examines network design problems where flow routing constraints ensure quality end-to-end service. These NP-hard problems are made more challenging by routing restrictions. The chapter covers modeling approaches, theoretical developments, and algorithms, including constrained shortest path and hop-constrained models, and presents solution methods combining reduction, valid inequalities, heuristics, branch-and-bound, and decomposition techniques.

Chapter 9 - Bilevel Network Design by *Martine Labbé and Patrice Marcotte* focuses on network design problems involving conflicting agents: the designer and the users, who act independently. Using bilevel programming, the designer anticipates user responses to its decisions. The chapter explores four applications - continuous network design, competitive location-queuing, network pricing, and network interdiction - while emphasizing algorithmic approaches.

Chapter 10 - Stochastic Network Design by *Mike Hewitt, Walter Rei, and Stein W. Wallace*, examines network design problems under uncertainty. It covers stochastic modeling paradigms, illustrated through the stochastic fixed-charge capacitated multicommodity problem, and explains scenario generation for approximating random parameters. The chapter also discusses exact and heuristic solution methods, highlighting decomposition strategies for efficiency, and concludes with future research directions.

Chapter 11 - Robust Network Design by *Arie M. C. A. Koster and Daniel R. Schmidt* explores network design under demand uncertainty using robust optimization, aiming for solutions feasible across all considered scenarios. This approach is crucial for long-term strategic planning, where forecast accuracy affects network feasibility. The chapter covers applications to single- and multicommodity networks and introduces relevant extensions of robust optimization.

Chapter 12 - Service Network Design by *Teodor Gabriel Crainic and Mike Hewitt* introduces network design as a key methodology for planning and decision-making in transportation and logistics. It focuses on designing service networks to efficiently and profitably manage resources while meeting customer demand, particularly in consolidation-based transportation. The chapter covers static and time-dependent problems, resource management, and uncertainty, providing a comprehensive methodology, application examples, algorithmic insights, and a research agenda.

Chapter 13 - Freight Railroad Service Network Design by *Mervat Chouman and Teodor Gabriel Crainic* explores the application of network design to railroad freight planning. It highlights the complexity of tactical planning, including train services, block formation, routing, and resource allocation, under a double consolidation policy. The chapter presents service network design models for both specific tasks, like car blocking, and integrated network-wide planning, covering static and time-dependent contexts with a focus on efficient resource use.

Chapter 14 - Motor Carrier Service Network Design by *Ilke Bakir, Alan Erera, and Martin Savelsbergh* focuses on network design models and solution methods for trucking operations. It addresses flow planning between terminals and load consolidation for less-than-truckload and package carriers, presenting integer programming models alongside exact and heuristic solution approaches.

Chapter 15 - Liner Shipping Network Design by *Marielle Christiansen, Erik Hellsten, David Pisinger, David Sacramento, and Charlotte*

Vilhelmsen, examines the design of service networks for long-haul liner shipping, including containerized and RoRo services. It introduces network design models, such as integrated mixed-integer programming and two-stage algorithms, and presents LINER-LIB test instances. The chapter concludes with future trends and research directions in liner shipping network design.

Chapter 16 - City Logistics by *Teodor Gabriel Crainic, Guido Perboli, and Nicoletta Ricciardi* explores urban freight systems designed to minimize transportation nuisances while supporting economic and social development. Characterized by stakeholder cooperation, cargo consolidation, and multimodal operations, City Logistics presents complex planning challenges. The chapter discusses network design methodologies tailored to these systems, addressing multi-layer facilities, time-dependent demand, fleet synchronization, and integration with vehicle routing, and highlights future research directions.

Chapter 17 - Public Transportation by *Antonio Mauttone, Héctor Cancela, and María E. Urquhart* examines network design methodologies for strategic and tactical planning of urban and intercity transit systems. It covers the design of bus, rail, and metro networks, balancing stakeholder interests in travel and infrastructure costs. The chapter presents mathematical formulations addressing passenger behavior, multiple objectives, and decision levels, along with solution approaches, including exact and heuristic methods for route generation, selection, and improvement.



▲ Book authors and scholars (from left to right, from top to bottom): Prof. Teodor Gabriel Crainic, Prof. Michel Gendreau, Prof. Antonio Frangioni, and late Prof. Bernard Gendron; Prof. Michel Gendreau, Prof. Bernard Gendron, and Prof. Teodor Gabriel Crainic.

Chapter 18 - Hub Network Design by *Ivan Contreras* explores hub-based networks in transportation and telecommunications, where hub facilities consolidate flows and reduce the number of required connections. The chapter treats hub network design as a multicommodity problem with node selection decisions, reviewing key features, decision types, common assumptions, and their impact on formulation and solution approaches.

Chapter 19 - Logistics Network Design by *Jean-François Cordeau, Walid Klibi, and Stefan Nickel* focuses on designing logistics and supply chain networks connecting suppliers, plants, warehouses, and customers. It presents a general modeling framework covering numerous practical variants and reviews key solution methods. The chapter also highlights recent advances in handling risk, uncertainty, sustainability, and reverse logistics in modern network design.

Chapter 20 - Collaboration in Transport and Logistics Networks by *Behzad Hezarkhani, Marco Slikker, and Tom Van Woensel* explores stakeholder collaboration in freight

transport and logistics to improve efficiency, resource use, and sustainability. It focuses on cost and benefit sharing - key challenges for successful cooperation in emerging concepts like the Physical Internet and City Logistics. The chapter reviews cost-sharing approaches using cooperative game theory and optimization-based methods, highlighting their application to both strategic and operational network design problems.

This book, thus, showcases the significant progress that has been achieved in solving large-scale network design problems. It also demonstrates that the scope of applications has expanded considerably, driven by a dynamic interplay between problem formulation, modeling, and solution methodologies. While this ongoing exchange and cross-fertilization have fueled the field's growth and will continue to advance it in the future, a lot remains to be done yet. Given its strengths, this book could become an irreplaceable "Handbook" about Network Design. Future application fields of this exciting book may include gene, gene-environment, eco-finance, neurological as well as regulatory networks, and games subject to them. 🌐

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