

Reflections on Wonderful OR Experiences at EURO Conferences Over 20 Years

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UMass**Amherst**

Isenberg School
of Management

Acknowledgment

Many thanks to Professors Gerhard-Wilhelm “Willi” Weber and Roberto Rossi for the invitation to speak in this interesting session. It is an honor!



Thanks also to the OR Society for hosting this conference!



Congratulations

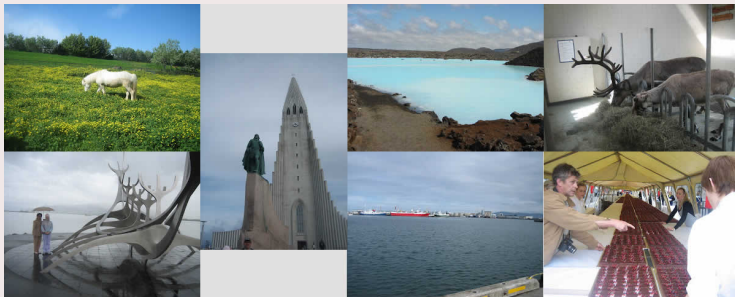
A BIG Congratulations to EURO on its 50th anniversary and also to its flagship journal, the *European Journal of Operational Research* (EJOR), published since 1977!



EURO 2006 Reykjavik

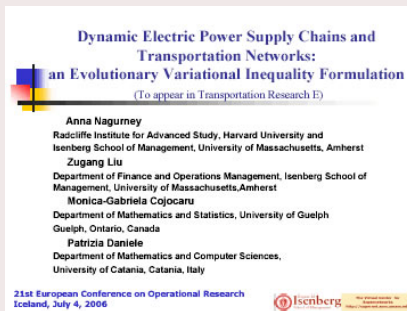
Reflections on EURO 2006 Reykjavik

That summer I had three weeks of conferences, beginning with one in Cyprus, followed by EURO Reykjavik, and then Erice in Sicily. I used only one carryon suitcase but, luckily, my husband and daughter met me in Reykjavik and brought warmer clothes.



EURO Reykjavik was an amazing conference - with 700 delegates and the biggest scientific conference there to that date!

My presentation at my first EURO conference was based on the paper, “Dynamic Electric Power Supply Chains and Transportation Networks: An Evolutionary Variational Inequality Formulation,” A. Nagurney, Z. Liu, M.-G. Cojocaru, and P. Daniele, *Transportation Research E* 43: (2007) pp 624-646.



Reflections on EURO 2006 Reykjavik

It was great to see OR colleagues!



Reflections on EURO 2006 Reykjavik

The week after EURO Reykjavik I was in Erice for a conference and Italy beat France in the World Cup final, which we watched. The celebrations that followed were incredible!



EURO 2015 Glasgow

Reflections on EURO 2015 Glasgow

That summer I also had 3 weeks of conferences in Europe, beginning with the Dynamics of Disasters conference that I co-organized in Kalamata, Greece, and then the EUROPT Workshop on Continuous Optimization in Edinburgh.



Reflections on EURO 2015 Glasgow

The EURO 2015 conference in Glasgow had 2,300 operations research delegates from around the world. It was, as of that date, the biggest conference ever held in Glasgow. I was delighted to have two papers presented at EURO Glasgow.

An Integrated Disaster Relief
Supply Chain Network Model
With Time Targets and Demand Uncertainty

ISENBERG
JONAS FLÖDEN

MANHATTAN
COLLEGE

University
of Portland

Anna Nagurney¹
John F. Smith Memorial Professor

Amir H. Masoumi²
Assistant Professor

Min Yu³
Assistant Professor

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³ - Operations & Technology Management Group
Pamplin School of Business Administration, University of Portland, Portland, OR 97203

27th European Conference on Operational Research, Glasgow, UK - July 12-15, 2015

Nagurney, Masoumi, and Yu An Integrated Disaster Relief Supply Chain Network Model

Fashion Supply Chain Network Competition with
Ecolabelling

Anna Nagurney^{1,2}, **Min Yu**³, and **Jonas Floden**²

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Isenberg School of Management
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*The 27th European Conference on Operational Research
July 12-15, 2015, Glasgow, Scotland*

Nagurney, Yu, and Floden Fashion Supply Chain Network Competition with Ecolabelling

Reflections on EURO 2015 Glasgow



It was thrilling to have the fashion supply chain paper with ecolabelling that I had presented in a Springer book on display (along with chapters of mine in two other books).

Reflections on EURO 2015 Glasgow

A big highlight of EURO Glasgow was hearing Sir Alan Wilson, then of UCL, deliver a keynote talk on the Future of Cities in the beautiful Barony Hall, which was packed. He was then the Professor of Urban Regional Systems.



Sir Wilson began his talk by stating that “he secretly thought that he always was an Operations Researcher,” and then stated that he is an Operations Researcher.

He emphasized nonlinearities, complex systems, and the high level of interdependencies in cities (just think of population and infrastructure, for example).

Sir Wilson also noted the importance of transportation and networks and how infrastructure ties issues of population with the economics of cities.

In his keynote, Sir Wilson listed 6 challenges of cities in the United Kingdom, and stated that the challenges also apply to other cities and I agree.

Specifically, he noted the challenges as being: people (demography), city economies, the environment and sustainability, urban form (land use and green belts, which I am so passionate about), infrastructure, and governance. He said that the UK is very centralized and cities are pushing for more decentralization and autonomy.

In 2007, Sir Wilson was elected an RSAI (Regional Science Association International) Fellow and so was I!

Another big highlight was to hear R. Tyrrell “Terry” Rockafellar deliver the IFORS Distinguished Lecture: “Risk and Reliability in Stochastic Optimization.”



Photo courtesy of IFORS.

EURO 2016 Poznan

Reflections on EURO 2016 Poznan

I was a Visiting Fellow at All Souls College at Oxford University during the 2016 Trinity term and traveled from the UK to Poznan for the conference.



The above photos were taken at the Oxford Encaenium at which both the Nobel Laureate Paul Krugman and MIT Professor Millie Dresselhaus received honorary degrees. And, amazingly, one of the papers of mine presented in Glasgow was published in an edited volume in which Krugman also had an invited chapter.

Reflections on EURO 2016 Poznan

The Poznan EURO Conference was rich in culture and delicious food.



Reflections on EURO 2016 Poznan

The first paper that I presented was, “Competitive Food Supply Chain Networks with Application to Fresh Produce,” which was co-authored with Min Yu. This paper was invited in a special session: Meet the Editors of EJOR. The Editors of the *European Journal of Operational Research* (EJOR) discussed the journal and our paper was one of two selected as being impactful and highly cited.



Three additional papers of mine that were presented. Two were scheduled in parallel sessions so, luckily, I had a co-author available to present.

The image displays three presentation slides from the EURO 2016 conference. The left slide, titled "Physical Proof of the Occurrence of the Braess Paradox in Electrical Circuits", is by Ladimer S. Nagurney¹ and Anna Nagurney². It features logos for the University of Hartford, EURO 2016, and ISEBERG UMass Amherst. The middle slide, titled "A Supply Chain Network Game Theory Model of Cybersecurity Investments with Nonlinear Budget Constraints", is by Anna Nagurney¹, Patricia Daniele², and Shivani Shukla¹. It includes logos for ISEBERG School of Management, University of Massachusetts Amherst, and the University of Catania. The right slide, titled "Freight Service Provision for Disaster Relief: A Competitive Network Model with Computations", is by Anna Nagurney. It features logos for ISEBERG School of Management, University of Massachusetts Amherst, and the 28th European Conference on Operational Research. All slides include the conference details: EURO 2016, 28th European Conference on Operational Research, Poznan, Poland, July 3-6, 2016.

Slide 1 (Left):
Physical Proof of the Occurrence of the Braess Paradox in Electrical Circuits
Ladimer S. Nagurney¹ and Anna Nagurney²
¹Department of Electrical and Computer Engineering
University of Hartford, West Hartford, CT 06117
and
²Department of Operations and Information Management
University of Massachusetts, Amherst, MA 01003
July 5, 2016
UNIVERSITY OF HARTFORD EURO 2016 ISEBERG UMass AMHERST
Ladimer S. Nagurney and Anna Nagurney

Slide 2 (Middle):
A Supply Chain Network Game Theory Model of Cybersecurity Investments with Nonlinear Budget Constraints
Anna Nagurney¹, Patricia Daniele², Shivani Shukla¹
ISEBERG School of Management
University of Massachusetts Amherst
Amherst, Massachusetts 01003
¹Department of Mathematics and Computer Science
University of Catania
6-95125 Catania
28th European Conference on Operational Research,
Poznan, July 3-6, 2016
Session: Recent Advances in Dynamics of Variational Inequalities and Equilibrium Problems
Anna Nagurney

Slide 3 (Right):
Freight Service Provision for Disaster Relief: A Competitive Network Model with Computations
Anna Nagurney
ISEBERG School of Management
University of Massachusetts Amherst
Amherst, Massachusetts 01003
EURO 2016
28th European Conference on Operational Research
Poznan, Poland, July 3-6, 2016
EURO 2016 ISEBERG UMass AMHERST
Anna Nagurney

Reflections on EURO 2016 Poznan

This conference was also exceptional in its organization.



A major highlight was hearing Nobel laureate Robert Aumann deliver the plenary lecture: “Why Optimize? An Evolutionary Perspective.”

EURO 2018 Valencia

I could not make it to this EURO conference, which I heard was excellent, but a collaborator (and former PhD student) did present a co-authored paper of ours that was published in EJOR.



A Competitive Multiperiod Supply Chain Network Model with Freight Carriers and Green Technology Investment Option

Jose M. Cruz

Sara Saberi (WPI), Joseph Sarkis (WPI), Anna Nagurny (UMass)

School of Business
University of Connecticut
Hartford, CT 06119

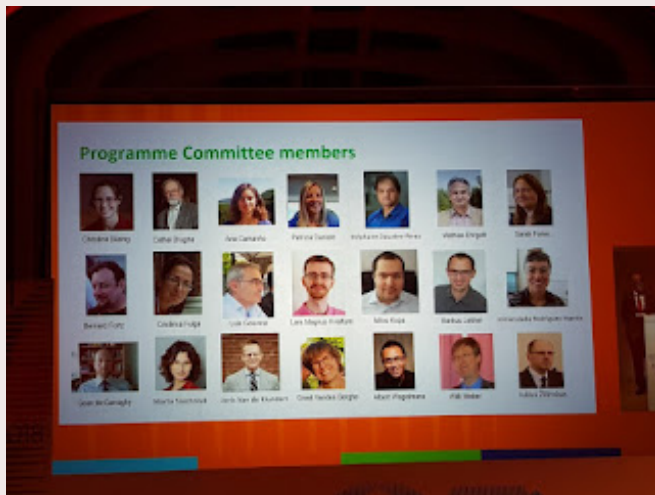
EURO 2018
July 8-11, 2018, Valencia, Spain

Jose M. Cruz: UCONN School of Business

EURO 2019 Dublin

Reflections on EURO 2019 Dublin

Acknowledgments to the Programme Committee of this and ALL other EURO conferences!



Reflections on EURO 2019 Dublin

Women in OR Panel



WOMEN IN OR PANEL SESSION

The Equality, Diversity and Inclusion agenda: How do we weigh a tonne of feathers?

Monday 24th June 2019
17:45 – 19:00
O'Reilly Hall

We aim to continue the conversation started at EURO 2018 Women in Science. That session recognised the historical contribution of many brilliant women. At EURO 2019, we aim to conduct a constructive dialogue on how we (the OR community) can contribute to recognising the contribution of current actors within the OR discipline. The agenda for the Women in OR panel session is an open discussion on: "Thoughts on/research plans for 'Weighing a tonne of feathers'", i.e., how to recognise the contribution of all OR actors.

Panelists will discuss a limited number of topics and action proposals solicited via a short pre-conference survey (a link will be circulated to all conference participants). Panelists (and audience) will contribute to identifying follow on actions which may include data gathering to identify best practice/specific barriers; collaborative journal paper/journal special issue; mentor/collaboration matching; EURO task force to articulate Equality Diversity & Inclusion goals/link to Sustainable Development Goals.

Panelists

1. Prof Sally Brailsford, Southampton Business School, University of Southampton, UK;
2. Prof. Marina Labbe, Computer Science Department, Université Libre de Bruxelles, Belgium;
3. Prof Anna Nagurney, Isenberg School of Management, University of Massachusetts Amherst, US;
4. Prof Ulrike Reich, New-Ulm University of Applied Sciences, Bavaria, Germany;
5. Prof Daniela Viga, Department of Electrical, Electronic, and Information Engineering, University of Bologna, Italy.

Panel Chair: Dr Paula Carroll, School of Business, University College Dublin, Ireland
Panel Facilitators: Dr Sarah Fores (EURO), Dr Frances O'Brien, Warwick Business School, University of Warwick, UK, Dr Christina Phillips, Leeds University Business School, University of Leeds.

Panel Session Schedule:
17:45: Introductions
17:55: Panel discussion
18:30: Participant – open forum
18:55: Close

Follow up Women in OR Workshop: Following on from the Women in OR main session on Monday, this session (in T02) allows participants to discuss issues raised and ways forward. To maintain momentum on a EURO level, what networking and evaluation systems might we put in place to successfully address issues of equality and diversity in the field of OR?





E: EURO2019DUBLIN@ASBEV.IE T: +353 1 645 6130

The logo for WISDOM, with the word in blue capital letters.

WOMEN IN SOCIETY:
DOING OPERATIONAL RESEARCH
AND MANAGEMENT SCIENCE

The WISDOM Forum, established in 2020, and part of EURO, is an outgrowth of this panel and ensuing discussions. The WISDOM Forum aims to provide a platform to support, empower and encourage the participation of all genders in Operational Research within EURO.

And, at EURO 2019, fellow panelist Martine Labbe' became the first recipient of the EURO Gold Medal!

It was wonderful to be introduced by Matthias Ehrgott of Lancaster University before my tutorial.



Game Theory and Variational Inequalities: From Transportation and Supply Chains to Financial Networks and the Internet

Professor Anna Nagurny

John F. Smith Memorial Professor
Director – Virtual Center for Supernetworks
Isenberg School of Management
University of Massachusetts Amherst

EURO - Tutorial on Game Theory and Variational Inequalities



Professor Anna Nagurny

EURO - Tutorial on Game Theory and Variational Inequalities

In addition to the tutorial that I gave at this conference I also presented the following paper: “Global Supply Chain Networks and Tariff Rate Quotas: Equilibrium Analysis with Application to Agricultural Products,” A. Nagurney, D. Besik, and L.S. Nagurney, *Journal of Global Optimization* 75: (2019) pp 439–460.



Reflections on EURO 2019 Dublin

Lasting memories were created at this conference!



EURO 2021 Athens - Virtual

Reflections on EURO 2021 Athens - Virtual

The COVID-19 pandemic was an extremely challenging time for all of us but IFORS, INFORMS, and EURO helped to keep us connected. Thanks to Ruth Kaufman for organizing the Making an Impact Lightning Talks!

OR and COVID-19: From Research to Policy Making an Impact Lightning Talk

Professor Anna Nagurney

Eugene M. Isenberg Chair in Integrative Studies
Director – Virtual Center for Supernetworks
Isenberg School of Management
University of Massachusetts Amherst

EURO Conference, July 11-14, 2021



**EUROATHENS
2021 GREECE
HYBRID**

ISENBERG
UMASS AMHERST

Professor Anna Nagurney


OR and COVID-19

This presentation was given by my then PhD student based on a paper published in *The International Journal of Production Economics*.

A Multicountry, Multicommodity Stochastic Game Theory Network Model of Competition for Medical Supplies Inspired by the Covid-19 Pandemic

Mojtaba Salarpour¹, Anna Nagurney¹

¹ Department of Operations and Information Management
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University of Massachusetts Amherst


31st European Conference on Operational Research
11 - 14 July 2021 | University of West Attica | Athens | Greece

EURO 2024 Copenhagen

Reflections on EURO 2024 Copenhagen

This EURO conference began for me with the WISDOM panel on Networking that I had the pleasure of speaking on. The panel was organized by Paula Carroll and Annunziata Esposito Amideo. Joining me on the panel was life coach Margaret Collins.



WISDOM

WOMEN IN SOCIETY:
DOING OPERATIONAL RESEARCH
AND MANAGEMENT SCIENCE



The WISDOM Forum is very active in organizing events, engaging in social media and has various terrific initiatives; more info on its website. Other related such forums include the WORMS forum of the professional society of INFORMS and WORAN of The OR Society.

What we emphasized on the panel included the following:

1. The importance of networking.
2. Strategies for developing networks of visibility.
3. Communication skills to deliver your message.
4. How to deal with nerves or anxiety.

Reflections on EURO 2024 Copenhagen

I chaired the invited session: **Complex Societal Problems**, and also delivered a presentation on our latest research with my Isenberg School PhD student Dana Hassani and two Kyiv School of Economics colleagues: Oleg Nivievskyi and Pavlo Martyshev.



The session was excellent and included additional papers on refugee resettlement, impacts of climate change of refugee flows, and healthcare entrepreneurship in rural areas of Kenya.

And my collaborator (and former PhD student), Deniz Besik, presented at EURO Copenhagen our paper, which was published this month of June in the *Journal of Global Optimization*!

Journal of Global Optimization
<https://doi.org/10.1007/s10898-025-05507-3>

Multicommodity fresh produce trade networks with quality deterioration under congestion and transportation capacities

Deniz Besik¹ and Anna Nagurney²

Received: October 2024 / Accepted: 22 May 2025
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Abstract

This paper constructs a multicommodity spatial price equilibrium framework designed to allow for the quantification of the impacts of congestion and transportation capacities on trade flows and product prices while capturing the degradation of fresh produce quality through explicit quality deterioration formulas. We present the multicommodity fresh produce trade network model under equilibrium conditions both without and with maximum quality standards. Alternative variational inequality formulations of the governing equilibrium conditions are derived, with one of them exhibiting particularly favorable features for computational purposes. The numerical examples focus on the banana trade, since bananas are the most widely traded fresh produce commodity globally, with leading exporters being Ecuador and Costa Rica and major importers, the United States and the European Union. Through various scenarios, we simulate congestion and time delays in the Panama Canal and report on the impacts of ongoing disruptions on shipment times, equilibrium shipment volumes, the supply and demand prices, quality levels at the supply markets and at the demand markets, and transportation costs. Our baseline numerical example results closely align with real-life data on export volumes of bananas, the associated supply and demand prices, and the transportation costs. The comprehensive numerical results reveal that reductions in transportation capacity and prolonged shipment times, as in the Panama Canal due to climate-related issues, lead to decreased banana shipment volumes, increased initial quality, but diminished final quality of bananas at demand markets. This exposes significant challenges for consumers, as well as for producers, as instances of transportation capacity disruptions and extended shipment times result in higher prices for lower-quality bananas.

Keywords Trade · Fresh produce · Networks · Quality deterioration · Variational inequalities · Bananas

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Multicommodity Fresh Produce Trade Networks with Quality Deterioration Under Congestion and Transportation Capacities

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The 33rd EURO Conference
Copenhagen, Denmark
June 30 - July 3, 2024

Reflections on EURO 2024 Copenhagen



From having several of my PhD students there to the great EJOR Editorial Board meeting and seeing colleagues from around the globe made for an incredible conference!

Reflections on EURO 2024 Copenhagen



And, at the Halkidiki Conference, I met Tetyana Romanova and Petro Stetsyuk, both from Kharkiv in Ukraine, and saw them again at EURO Copenhagen. Tetyana is now a Professor at Leeds University.

EURO 2025 Leeds

Reflections on EURO 2025 Leeds

We are still creating memories of this EURO Conference.



In addition to this presentation, I am grateful to Ruth Kaufman for including me in the Making An Impact Lightning Talk Session, and also for the opportunity to present on crop and cargo war risk insurance, work done with my PhD student, Ismael Pour, and colleague Borys Kornych in Odesa, Ukraine.

***Congratulations to EURO!
Thanks for the Memories!***



***Time to Celebrate and
Let's Make More Memories!***

Thank You Very Much!



The Virtual Center for Supernetworks

Supernetworks for Optimal Decision-Making and Improving the Global Quality of Life



Director's Welcome	About the Director	Projects	Supernetworks Laboratory	Center Associates	Media Coverage	Braess Paradox
Downloadable Articles	Visuals	Audio/Video	Books	Commentaries & OpEds	The Supernetwork Sentinel	Congratulations & Kudos



The Virtual Center for Supernetworks is an interdisciplinary center at the Isenberg School of Management that advances knowledge on large-scale networks and integrates operations research and management science, engineering, and economics. Its Director is Dr. Anna Nagurney, the Eugene M. Isenberg Chair in Integrative Studies.

Mission: The Virtual Center for Supernetworks fosters the study and application of supernetworks and serves as a resource on networks ranging from transportation and logistics, including supply chains, and the Internet, to a spectrum of economic networks.

The Applications of Supernetworks Include: decision-making, optimization, and game theory; supply chain management; critical infrastructure from transportation to electric power networks; financial networks; knowledge and social networks; energy, the environment, and sustainability; cybersecurity; Future Internet Architectures; risk management; network vulnerability, resiliency, and performance metrics; humanitarian logistics and healthcare.

Announcements and Notes	Photos of Center Activities	Photos of Network Innovators	Friends of the Center	Course Lectures	Fulbright Lectures	UMass Amherst INFORMS Student Chapter
Professor Anna Nagurney's Blog	Network Classics	Doctoral Dissertations	Conferences	Journals	Societies	Archive

More information on our work can be found on the Supernetwork Center site:
<https://supernet.isenberg.umass.edu/>