



Workshop of the ÖGOR-Working Group

"Operations Research in Health Care & Disaster Management"

(<https://oegor-hcdm.univie.ac.at/>)

On Friday, September 30th 2022, the OEGOR working group "Operations Research in Health Care & Disaster Management" organized a hybrid workshop on current health and disaster management topics. Following two years of online meetings, the 2022 meeting took place at the University of Natural Resources and Life Sciences in Vienna. To also offer access to the presentations for scientists and practitioners unable to participate in person, the organizers also provided online access via zoom.

As a representative of the University of Natural Resources and Life Sciences and member of the workshop organizing committee, Patrick Hirsch opened the conference. Marion Rauner also welcomed the participants (researchers, practitioners, and students) from different countries. As part of this year's workshop, two presentations were scheduled in the Health Care Management section. However, the organizers had to cancel the first presentation of Maria Besiou (Kühne Logistics University in Hamburg) at short notice. The Disaster Management section comprised three further talks.

In the Health Care Management section, **Sean Rafter** from HELP Logistics talked about challenges for humanitarian logistics in his talk titled "The humanitarian logistics sector in times of a global pandemic – Review and outlook". After outlining the mission and service spectrum of HELP Logistics, Sean Rafter provided interesting insights into the findings of a 2021 survey among international and local respondents working in this field to identify supply chain trends and developments and support decision-makers with effective and efficient solutions. He also discussed several problems regarding the vulnerability of health supply chains in developing countries during the pandemic and presented various steps to strengthen the health sector.



Sean Rafter presenting insights into supply chain logistics

In the second talk, **Raimund Kovacevic** from the University for Continuing Education Krems talked about the paper "Optimal control for a distributed epidemiological model", co-authored with Vladimir

Veliov and Georgi Angelov (both from the (Technical University Vienna), and Nikolaos Stilianakis (Joint Research Center of the European Commission)). After outlining the model assumptions, Raimund Kovacevic presented the proposed single integral equation approach. He also provided some numerical results highlighting the proposed approach's advantages.

Optimal control for a distributed epidemiological model

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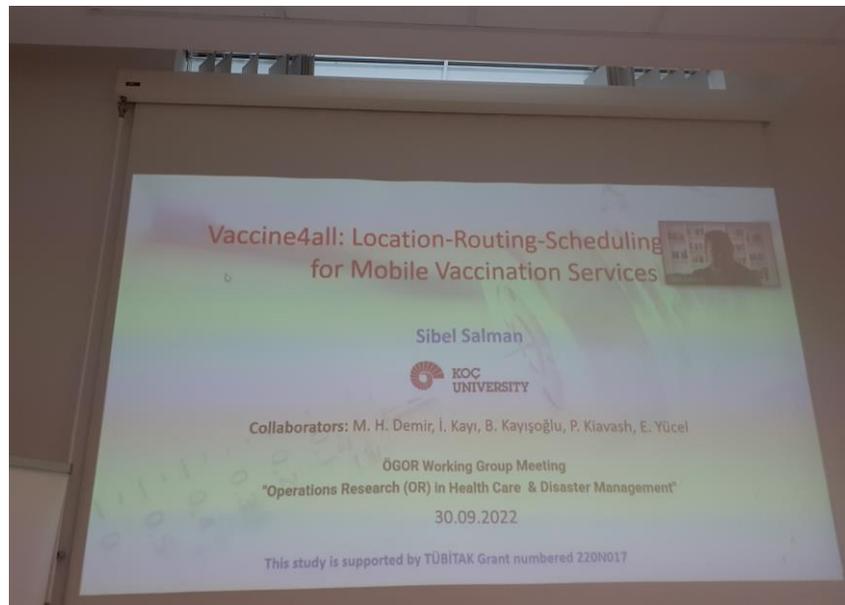
Raimund Kovacevic introducing an optimal control model

The third presenter was **Melanie Reuter-Oppermann** from the Technical University Darmstadt in Germany, who talked about a BBK (Bundesamt für Bevölkerungsschutz und Katastrophenhilfe)-funded research project. Their project aims to design a simulation-based framework to analyze modes of transport and patient transport algorithms in case of mass-casualty incidents. Besides summarising the outline of the project, she presented a first bi-criteria stochastic programme to locate relief trains and a case study for the German federal state of Bavaria using the proposed bi-criteria stochastic programme.



Melanie Reuter-Oppermann presenting simulation results

Sibel Salman's talk titled "Vaccine4all: Location-Routing-Scheduling Models for Mobile Vaccination Services" focused on optimizing the provision of vaccination services by means of mobile facilities to patients dispersed over a geographical region. Based on defining a multi-objective optimization problem over a multi-period planning horizon and a heuristic solution algorithm Sibel presented a case study on vaccinating Syrian refugees in a southeastern province of Turkey conducted by the Koc University, Istanbul.



Sibil Salman, participating via Zoom and talking about optimizing the location of mobile vaccination facilities

After each presentation, lively discussions emerged, with some extending even into the breaks. The on-site character of the workshop enabled the participants to network with each other in person.

At the end of the workshop, Nikolas Furian from the Technical University of Graz informed the participants that the Technical University Graz will be hosting the 2023 ORAHS conference in Graz (<http://orahs.di.unigo.it/>). The conference will take place from 16 – 21 July 2023.

At the end of the workshop, Patrick Hirsch and Marion Rauner thanked all participants for their active contributions.

Walter Gutjahr, University of Vienna,

Patrick Hirsch, University of Natural Resources and Life Sciences Vienna,

Marion Rauner, University of Vienna,

Margit Sommersguter-Reichmann, University of Graz, and

Tina Wakolbinger, Vienna University of Economics and Business.