



Ruhr Master School
of Applied Sciences

online

RMS SUMMER SCHOOL 2021

#06





REGIONAL SUSTAINABILITY: SMART CITIES

INTERDISCIPLINARY VISIONS FOR THE CITY OF THE FUTURE.

Due to continuous growth and increased population density, the question of how to make (and maintain) cities sustainable is becoming more and more pressing. How can we ensure quality of life in crowded cities and make them sustainable, connected and future-proof?

From 27th August to 3rd September 2021, participants of the international RMS Summer School addressed these significant questions. Titled "Regional Sustainability: Smart Cities", the sixth edition of the event was entirely digital due to Covid19. However, the central aim of the teaching format remained the same: to enable an intensive international and interdisciplinary exchange on a relevant topic of sustainability between experts and students from around the globe. Therefore both speakers and programme items covered different perspectives on the subject.

Master students of all disciplines were invited and – besides Germany – logged in from e.g. Jordan, Kosovo, Palestine, Albania. International participants started four days early with an accompanying programme in order to get to know region and culture, to connect with each other and to meet their supporting buddies from the local RMS universities.

RMS Summer School is a joint offer of the RMS universities of applied sciences Fachhochschule Dortmund (FH DO), Hochschule Bochum (HS BO) and Westfälische Hochschule (WH). The event was supported by Stiftung Mercator and the German Academic Exchange Service (DAAD) with funds from the Federal Foreign Office.

SCHEDULE ACCOMPANYING PROGRAMME

DAY	AGENDA
Monday, 23/08/2021	<ul style="list-style-type: none"> Welcome & Get-Together Buddy Chat Potluck Cooking Event
Tuesday, 24/08/2021	<ul style="list-style-type: none"> German Basic Knowledge with Karolin Heibel Digital Sightseeing: Bochum Westpark Live Tour Sports Night: yoga course, fitness course
Wednesday, 25/08/2021	<ul style="list-style-type: none"> German Basic Knowledge with Karolin Heibel (HS BO) Buddy Time: Get to know life in Ruhr Metropolis
Thursday, 26/08/2021	<ul style="list-style-type: none"> German Basic Knowledge with Karolin Heibel (HS BO) Digital Sightseeing: Exploring Signal Iduna Park of BVB 09 Sports Night: bodyforming course Buddy Time: Game Night

SCHEDULE PROFESSIONAL PROGRAMME

DAY	AGENDA
Friday, 27/08/2021	<ul style="list-style-type: none"> Cross-Cultural Connection Workshop with Matthieu Kollig (Working Between Cultures)
Monday, 30/08/2021	<ul style="list-style-type: none"> Impulse Talk: Smart Sustainable Cities in the Ruhr Area with Prof. Dr. Karin Küffmann (WH) Impulse Talk: Gelsenkirchen – the connected city with Lukas Rissel (City of Gelsenkirchen) Kick-Off Group Work: Create your Smart City Utopia Teambuilding Event: Escape Game
Tuesday, 31/08/2021	<ul style="list-style-type: none"> Impulse Talk: How DSOs can profit from innovative Data & Energy Analytics with Prof. Dr.-Ing. M. Laskowski (Eon AG) Group Work Impulse Talk: Unlocking the Smart Potential of our Cities by Data with Dr. Kay Suwelack (FH DO) Group Work Sports Night: yoga course, fitness course
Wednesday, 01/09/2021	<ul style="list-style-type: none"> Impulse Talk: Smart City - Buzz Word or Future? with Kurt Pommerenke (Allianz Smart City Dortmund) Impulse Talk: Prioritizing Quality of Life in a Smart City with Dr. Beverly Pasion (FH DO) Group Work
Thursday, 02/09/2021	<ul style="list-style-type: none"> Digital Excursion: German Rescue Robotics Center Robert Grafe (DRZ) and Prof. Dr. Thomas Straßmann (FH DO) Group Work Sports Night: bodyforming course
Friday, 03/09/2021	<ul style="list-style-type: none"> Panel Discussion with Prof. Dr. Karin Küffmann, Kurt Pommerenke, Timm Braasch, Tamara Appel Group Work Best Poster Award & Farewell

ACCOMPANYING PROGRAMME

MONDAY, 30/08/2021



Getting to know everyone.

RMS Summer School began with a warm welcome of both international participants and local buddies by Prof. Dr. Andreas Becker (RMS Director at FH DO), an introduction to the event and an online get-together. The students had prepared short video clips in advance, in which they introduced themselves, and a Miro board with information on both their student and private life.

After meeting their supporting buddies from the local RMS universities, both participants and RMS team met online for a potluck cooking event. The task was to prepare a potato salad of a typical regional recipe - and in the end, various delicious interpretations were served!

TUESDAY, 24/08/2021 - THURSDAY, 26/08/2021

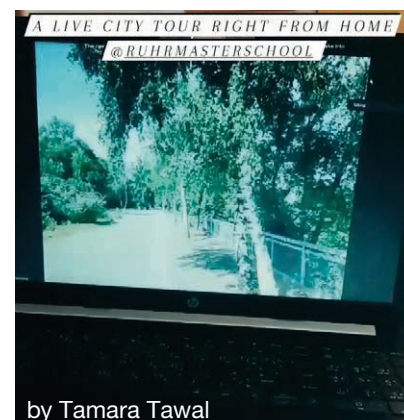
Getting to know language, region and culture.

Each day started with a German course by Karolin Heibel, German teacher at HS BO. In her morning sessions from Tuesday to Thursday, Karolin introduced the international participants to some basic German knowledge, covering casual small talk as well as university vocabulary.

The afternoon and evening sessions then included online sightseeing and buddy time:

- On **Tuesday afternoon**, the group attended an online live tour of Bochum Westpark and Jahrhunderthalle, given by a team of Bochum City Marketing. The tour showed students how the coal and steel industry has shaped Ruhr Metropolis and how the former areas of heavy industry are used today.
- **Wednesday afternoon** was organized by nine local buddies from Hochschule Bochum and Fachhochschule Dortmund, who had volunteered to support the international students. They invited the guests to a Q&A session on life and study in the Ruhr Area and virtually guided them to their favourite places in the region.
- On **Thursday afternoon**, BVB tour guide Timo Hiepler virtually led the group through Signal Iduna Park, offering some first-hand insight and answering various questions on football in the Ruhr Area in general and BVB 09 in particular. In the evening, the buddies invited the international students to an online game night with „skribbl“.

In order to provide some physical activity after a day in front of the screen, we offered sport nights with yoga, fitness and bodyforming courses in cooperation with the university sports trainers of Technische Universität Dortmund.



PROFESSIONAL PROGRAMME

FRIDAY, 27/08/2021

Communicating and collaborating across cultures.

After the official welcome by Prof. Dr. Andreas Becker, Prof. Dr. Timm Braasch (RMS director at WH), Prof. Dr. Tamara Appel (Vice Rector for Teaching and Studies at FH DO) and Laura Scharm (Stiftung Mercator), the whole group of now both national and international students participated in a cross-cultural connection workshop.

This training was led by psychologist Matthieu Kollig of Working Between Cultures and was aimed at expanding the students' intercultural skills when it comes to collaborating with people of different cultural backgrounds. Matthieu Kollig designed an intensive, practical and interactive training that built a mutual understanding of peculiarities in intercultural and international contexts. He illustrated with the help of various examples why intercultural learning can be challenging, but how diversity and its mutual recognition can also be a powerful driving force for innovative solutions.

The group also shared their personal experiences and learned how to overcome these challenges by remaining curious about new cultures, focusing on mutual understanding and recognising similarities while still accepting each others differences.





MONDAY, 30/08/2021

Delving into the topic “Smart Cities“.

In the first lecture of our professional programme, Prof. Dr. Karin Küffmann gave a detailed overview of the Ruhr Metropolis, covering both its (industrial) history and current developments towards a modern, technically developed and sustainable region. Due to manifold examples of how different cities in the region deal with the transformation process towards becoming a smart city, the participants got a profound introduction to the topic.

It was therefore fitting that the next lecture gave a very practical example from an insider’s perspective: Lukas Rissel, a civil servant at the city of Gelsenkirchen, is working for the unit “Connected City”, which is developing a strategy for the digitalization of the city’s tasks with participation of its citizens. Via an interactive platform, Mr. Rissel and the participants could work actively together, exchange their ideas and ask/answer questions.

After lunch break it was finally time to **kick-off group work**. Divided into international and interdisciplinary mixed teams, the groups got their task:
Create your Smart City Utopia!

previous knowledge, from their different scientific background and their personal experiences.

Within the next three days, the groups had to work on their concept and design a poster based on their ideas. The input should come from the lectures as well as from their

For getting to know each other better, RMS sent each group in an escape room for teambuilding. Luckily, this was a digital event – otherwise, the rest of the week would have taken place without the RMS team...



Prof. Dr. Karin Küffmann (private source)



Lukas Rissel (private source)

Create your “Smart City Utopia“

Describe your smart city of the future. Which three topics are the most important to you and which technologies are essential to achieve them? Include them into your concept and describe your reasons why these three are particularly important to you and what impact they have on city life: Which problems can be solved or reduced? What challenges do you see when it comes to their implementation?

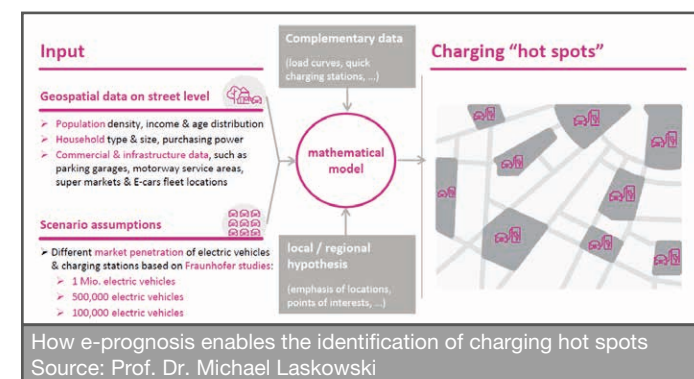




TUESDAY, 31/08/2021

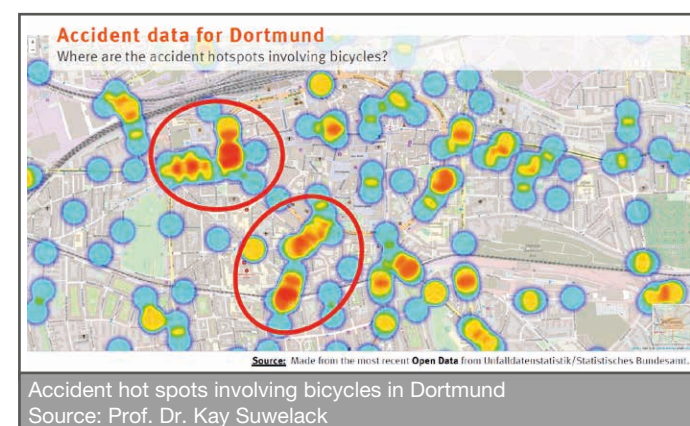
It's all about data.

Tuesday morning began with Big Data Analytics: How can available information be used for predictive analyses, so that the expansion of energy and IT infrastructure can be planned better and more exactly? Using e-mobility as an example, Prof. Dr. Michael Laskowski explained in his lecture "How DSOs Can Profit from Innovative Data & Energy Analytics" the opportunities to use data for the identification of charging hot spots. These information could be used e.g. by municipalities for developing their electricity grid.



Data and data analysis were also the topic of the next presentation "Digitalization and Industry 4.0" by Prof. Dr. Kay Suwelack. His research is based on publicly available data. During his lecture, he explained what could be found

out by data analysis: For example, a city's accident hot spots can be discovered and in the following measures could be initiated to improve the situation. He is very critical with the fact that available data are offered in different and often uncomfortable formats, so working with them needs a lot of initial effort.



Afterwards, the teams worked on their concepts and posters. Thanks to our partner, the sports department from Technische Universität Dortmund, everybody could recreate with an online yoga or fitness course.

WEDNESDAY, 01/09/2021

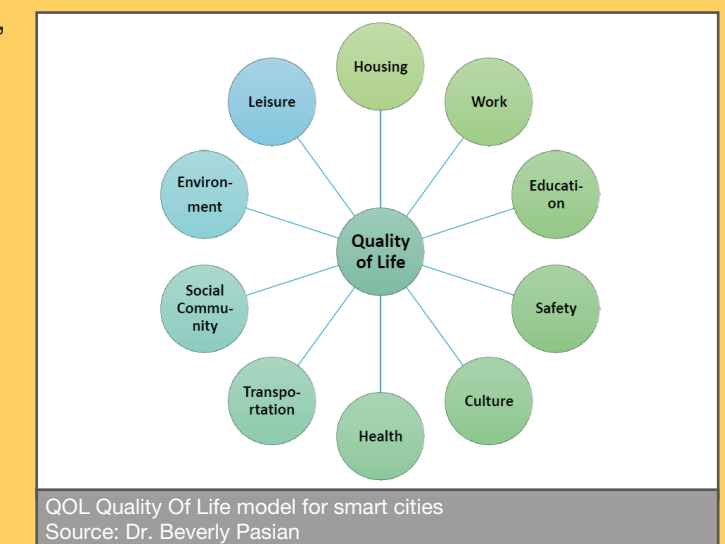
A day of applied (data) science.

After the science-driven input the day before, Wednesday started with first-hand practical insight by Kurt Pommerenke, project manager 'Smart City' at the Economic Development Agency Dortmund. His contribution dealt with the question "Smart City – Buzz Word or Future?". From municipal perspective he explained what digital transformation of a city needs and how Dortmund cooperates with local companies and institutions in the Smart City Alliance, allowing them to implement a variety of pilot projects.

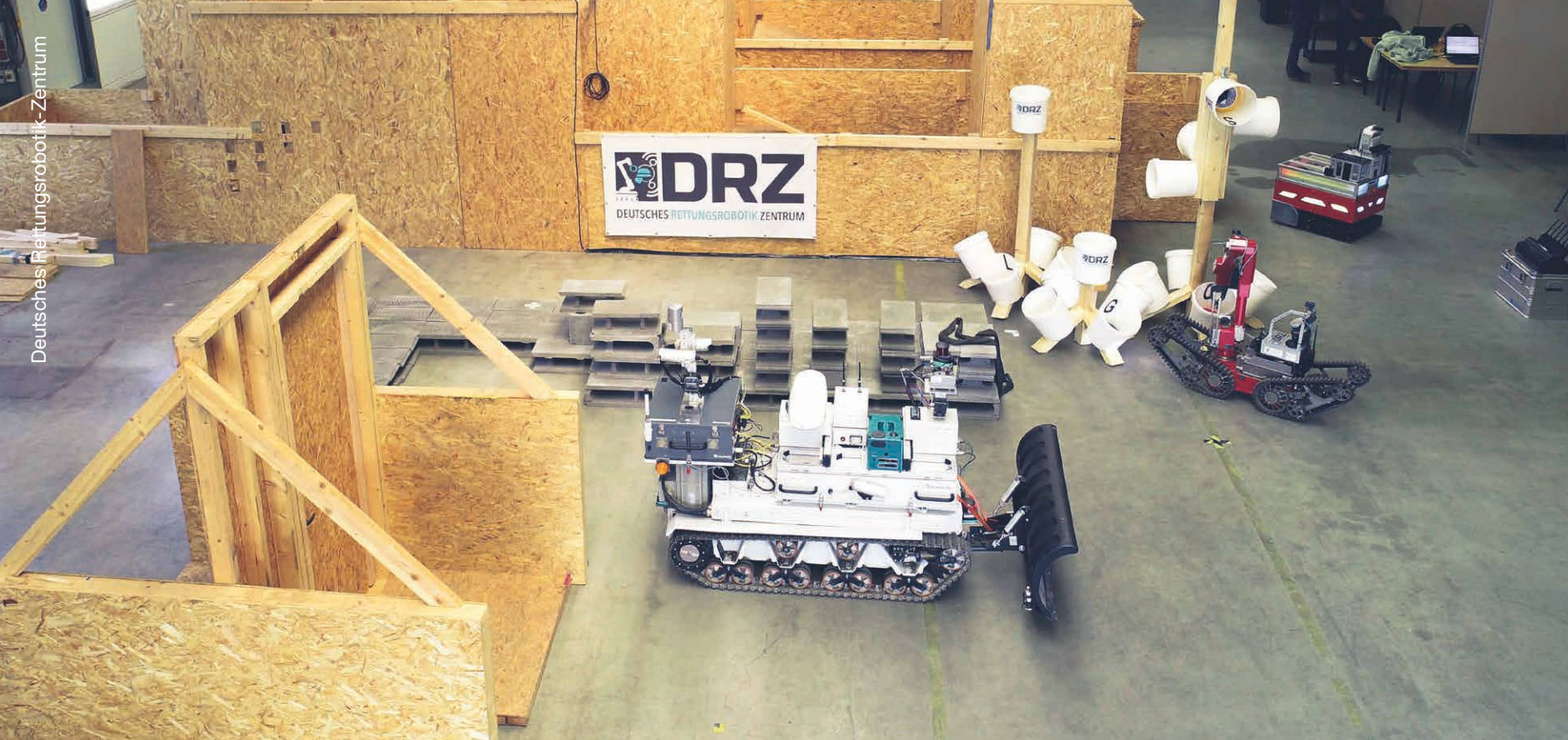


Afterwards, Dr. Beverly Pasian emphasized in her talk "Unlocking the Smart Potential of our Cities by Data" the

aspect of quality of life. By using available data in a smart way und focusing on its citizens, our cities are able to improve living standards e.g. in the fields of housing, safety, culture, transportation or environment. By giving examples and asking questions to the audience directly, she inspired the students to implement this topic into their own concepts.



Having the rich input of the two lectures in mind, the teams met in the afternoon to further work on their concepts.



THURSDAY, 02/09/2021

Putting theory to practice.

Thursday was excursion day and we were grateful for the opportunity to virtually visit the “Center for Rescue Robotics”. Prof. Dr. Thomas Straßmann introduced the group to the topic: He described the structure of the center and the institutions involved – from universities, researchers and companies to individual users. All partners work on different scenarios that enable on robots to effectively assist in rescue missions. Based on these scenarios, different robots and modules are developed.

After this theoretical input, we switched live into the Center for Rescue Robotics and to managing director Robert Grafe. He showcased different areas of the huge main hall where the robots are constructed and go through a series of tests. Due to his explanations, live images and short films about rescue missions, the summer school participants had a vivid impression on how these smart techno-

logies can improve safety for both saviours and saved and how they can provide life-saving support when it comes to assessing hazard situations.

In the afternoon, the teams worked on finalising their concepts and posters. Those who liked to move were invited to participate in a “bodyforming” course – again online with an instructor of the sports department from Technische Universität Dortmund.

Is it Friday already?

All participants came together for our last day of this year’s summer school. In a panel discussion, Prof. Dr. Tamara Appel, Prof. Dr. Karin Küffmann, Kurt Pommerenke and Prof. Dr. Timm Braasch reflected on the topic and critically asked: “Smart City – Solution or Hype?”. The host Jonas Sorgalla asked for achievements and key challenges, opinions about the aspect of sustainability and about next steps towards a smart and sustainable development of our cities and especially Ruhr Metropolis. Due to the different scientific backgrounds, the panel members had diverse views on projects and developments, but in the end all agreed on the statement that smart technologies have a high potential to make our life, our cities and our environment better and more sustainable.

After the panel, spotlight turned on the students: the four teams had the chance to present their posters and explain the concepts of their “Smart City Utopia”. The Jury had a hard job and discussed extensively about these contributions. Finally, a winner was selected – but this year’s best poster award really was a neck-and-neck race! All posters will travel to Barcelona from 16 to 18 November 2021 to be exhibited at the booth of North Rhine-Westphalia during the Smart City Expo World Congress.

For the farewell, poetry slammer Constantin Alexander rounded off the summer school’s topic and gave insights into his project “Obsolete City? Strategies for Sustainable Development”.



A big thank you to all those who contributed to the success of the Summer School – but most of all to the talented students, who supported the event with their attention, their questions and opinions, and their creative and constructive concepts.

Ruhr Master School is a cooperation of:

Hochschule Bochum
Bochum University
of Applied Sciences



**Fachhochschule
Dortmund**
University of Applied Sciences and Arts



**Westfälische
Hochschule**
Gelsenkirchen Bocholt Recklinghausen
University of Applied Sciences