Day 1: Welcome and Introductions

TIME	ACTIVITY	CONTENT
09:00-10:00	**Welcome from Coach Team**	Coach introductions Team introductions
10:00-11:00	**Networking in teams**	Blending individual skills to identify team skills.
11:00-11:30	Break	
11:30-13:00	**Networking between teams**	Presentation of teams.
13:00-14:00	Lunch	
14:00-15:30	**Knowledge Interactive Interchange** 1. Urban development (Prof Thierstein) 2. Crowd simulation and pedestrian flows (Dr Kneidel) 3. City infrastructure for people with Dementia and Alzheimer diseases (Dr Sandrone) 4. Sustainable urban mobility (Prof Wulfhorst) 5. Electric vehicles and battery technology (Prof Wu)	Interactive presentations: 15-minute presentation and 30-minute Q&A session.
15:30-16:00	Break	
16:00-17:00	**Idea Interchange**	Participants report to their team the knowledge acquired from the Knowledge Interactive Interchange with the support of guest speakers. Speakers spend 10 minutes with each team to consolidate ideas and knowledge.
17:00-19:00	Free time with optional tour of the site	
19:00-21:00	**Course Welcome Dinner**	Local restaurant
21:00	End of day 1 programme	

Objectives for Day 1

Aim of the Day

There are 3 aims of this day:

- To get to know our teams and the staff.
- To develop a broad academic understanding of the challenges in cities of the future.
- To discuss the implications for a range of disciplines.

Personal and Professional Development

- Networking and communication skills.
- International understanding.
- Deepening knowledge of the theme of the programme.
- Understanding of the implications in the interdisciplinary context.

Relevance to Research and the Future

Research communities have their foci conferences; stepping out of traditional disciplinary focussed programmes presents the opportunity to develop our knowledge, a shared understanding and to widen our connections. Growing our networks is essential to become involved in wider research discussions and to promote our career development.

References

Significance of research networking for enhancing collaboration and research productivity https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4049205/

Nature Blog http://blogs.nature.com/indigenus/2016/11/the-importance-of-networking-in-science.html

Day 2: Inspiring and Empowering

TIME	ACTIVITY	CONTENT
9:00 – 9:30	**Team Challenge 1**	Team activity 1
09:30-10:00	**Team Challenge 2**	Team activity 2
10:00-10:30	**Team Challenge 3**	Team activity 3
10:30-11:00	**Team Challenge 4**	Team activity 4
11:00-11:30	Break	
12:00-13:00	**Coach Interchange**	Debrief within teams supported by coaches.
13:00-14:30	Lunch & Travel	
14:30-16:30	**City2Share Project** http://www.city2share.de/city2share.html	Visit and discussion on multimodal, sustainable city development and citizen participation (Piazza Zenetti)
16:30-17:30	**Idea Interchange**	Teams consolidate the learning from the visit and discuss plans for their final projects.
17:30	End of day 2 programme	

Objectives for Day 2

Aim of the Day

There are two key aspects to this day. The focus of the morning is team working. Teams will work together to problem solve and address challenges. It will be fast paced and a fun way to develop skills, to get to know each other and develop our self-awareness.

In the afternoon, we will look outwards to discover how one industry is addressing the challenges of the cities of the future. We will visit Piazza Zenetti that is an example of multimodal and sustainable city development with citizen participation.

Personal and Professional Development

Wide range of development including:

- Team working skills
- Communication skills
- Problem solving
- Leadership & Delegation
- Self-awareness

Relevance to Research and the Future

Working well with others is crucial to research success. Becoming a researcher means joining a community of peers, who critique each other's work. Interacting and working well with peers leads to better research questions, greater research progress, wider recognition, improved citations and more funding opportunities. Researchers who work well with others are highly regarded by the community and employers.

References

Avila-Robinson, A. (2017). Multilevel exploration of the realities of interdisciplinary research centers for the management of knowledge integration. *Technovation*, http://dx.doi.org/10.1016/j.technovation.2017.01.003

Morse, W., Nielsen-Pincus, M., Force, J., & Wulfhorst, J. D. (2007). Bridges and barriers to developing and conducting Interdisciplinary graduate-student team research. *Ecology & Society*, 12(2), 1-14.

Day 3: Intersectoral

TIME	ACTIVITY	CONTENT
08:15-10:00	Travel to University of Applied Sciences (THI), Ingolstadt	Transfer pick-up in front of hotel
10:00-11:30	**CARISSMA – Center of Automotive Research on Integrated Safety Systems and Measurement Area** https://www.thi.de/en/research/carissma/	Guided tour of the facility.
11:30-12:30	Lunch	
12:30-14:00	**Knowledge Interactive Interchange** 1. CAR2X Communication in Cities of the Future (Prof. Facchi and Prof. Festag) 2. Requirements concerning passive safety systems in new mobility concepts (Prof. Birkner) 3. IT-Security in cities of the future – attack modelling (Prof. Hof)	Interactive presentations: 15-minute presentation and 30-minute Q&A session.
14:00-14:30	Break	
14:30-16:00	**Idea Interchange**	Participants report to their group the knowledge acquired from the Knowledge Interactive Interchange with the support of guest speakers. Speakers spend 15 minutes with each team to consolidate ideas and knowledge.
16:00-18:00	Travel to Munich	Transfer drop-off in front of hotel
18:00	End of day 3 programme	

Objectives for Day 3

Aim of the Day

We take a trip to the University of Applied Sciences (THI) in Ingolstadt, where we will visit the Centre of Automotive Research on Integrated Safety Systems and Measurement Area (CARISSMA).

We will also spend time discussing with experts of THI on safety systems, CAR2X and IT-security.

Personal and Professional Development

- Listening Skills
- Debating Skills
- Stakeholder awareness
- Further develop our understanding of the theme in a real-world context
- Deepening knowledge of interdisciplinary considerations
- Networking

Relevance to Research and the Future

Recognising the benefits of actively engaging with relevant users and stakeholders is important for any career. Furthermore, research impact is of growing importance. Research funders, whether European or national, ask that we are able to identify all the stakeholders who will be affected by our research outcomes. Stakeholder engagement helps us form a shared understanding of the context and the needs of users. It encourages us to consider ways to ensure our research meets their needs.

References

Using research to solve real world problems
https://www.ft.com/content/58dce2f2-bc8c-11e1-a470-00144feabdc0?mhq5j=e1

Here's a look at smart cities of the future.
https://futurism.com/heres-a-look-at-the-smart-cities-of-the-future/

Day 4: Accelerator Project

TIME	ACTIVITY	CONTENT
09:00-10:30	**Accelerator Project Collaboration**	Teams work on the development of their projects.
10:30-11:00	Break	
11:00-12:30	**Accelerator Project Collaboration**	Teams work on the development of their projects.
12:30-13:30	Lunch	
13:30-14:30	**Accelerator Project Collaboration**	Prepare pitch to present the draft project.
14:30-15:00	Break	
15:00-16:00	**Elevator Pitches**	Teams pitch their ideas for the project and receive constructive feedback from Dr Remy Husein and all participants.
16:00-18:00	**Accelerator Project Collaboration**	Teams work on the development of their projects following feedback received.
18:00	End of day 4 programme	

Objectives for Day 4

Aim of the Day

The aim is to work in team to propose an academic project that would combine all the disciplines and/or expertise of the participants to innovate for or address a solution within the context of Cities of the Future.

Participants will pitch their ideas in an elevator pitch in the afternoon. This provides the opportunity for initial feedback on the idea, and participants can adapt their proposals.

Skills Developed

- Creativity and lateral thinking skills, idea generation.
- Interdisciplinary collaboration
- Problem solving
- Pitching solutions
- International working

Relevance to Research and the Future

The need for research collaboration is growing and there are many reasons why. For example there is the increased:

- need for interdisciplinary knowledge to solve problems;
- need for cross-fertilisation of ideas between disciplines;
- need for access to specialised skills;
- need to share access to complex and expensive instrumentation;
- opportunity to access funding;
- opportunity for visibility and recognition.

References

Thompson Kleina, T, Falk-Krzesinskib, H.J. (2017). Interdisciplinary and collaborative work: Framing promotion and tenure practices and policies. *Research Policy*, 46 (6, July 2017), 1055–1061.

Cummings J.N., Kiesler, S. (2005). Collaborative Research Across Disciplinary and Organizational Boundaries. *Social Studies of Science*, 35 (5), 703 – 722.

https://www.elsevier.com/connect/a-brief-guide-to-research-collaboration-for-the-young-scholar

Day 5: Presenting with Impact

TIME	ACTIVITY	CONTENT
09:00-10:30	**Accelerator Project Collaboration**	Final preparation.
10:30-11:00	Break	
11:00-12:30	**Accelerator Project Final**	Each team has 15 mins: 10-minute talk + 5 minutes for questions. Judges: Prof. Hans-Joachim Bungartz Prof. Katrin Offe Dr Remy Husein
12:30-13:30	Lunch	
13:30-13:45	**Announcement of winner**	
13:45-15:00	**Roundtable Roundup**	Feedback from judges Debrief of the learning in teams
15:00-15:30	**Farewell by Imperial and TUM**	Prof Hans-Joachim Bungartz, TUM Graduate Dean Certificates
15:30–16:00	End of day 5 programme and course week	

Objectives for Day 5

Aim of the Day

The final day focuses on presenting with impact. Each accelerator project team will present together their idea to the rest of the participants. It is competitive and offers you the chance to outshine your co-participant teams.

This is the opportunity for participants to practise presentation skills, creativity and lateral thinking skills and to work well as a team. Coaches will be supporting their teams throughout the day.

Skills Developed

- Presentation skills
- Presenting under pressure
- Presenting as a team
- Listening skills
- Self-awareness

Relevance to Research and the Future

Communicating is an essential part of being an academic and in many other careers. Some examples of why we need great communication and presenting skills include:

- To ensure our research ideas are clear.
- To ensure we have a shared understanding (i.e. amongst team members).
- To share research findings and likely outcomes.
- To avoid miscommunication and misunderstandings.
- To inspire others in our work (e.g. funders, other researchers, employers)
- To inspire others to adopt best practice (e.g. sharing new methodology).
- To understand how to reduce stress whilst presenting.

References

Melissa D. Clarkson (2016). Communication Training for Scientists and Engineers: A Framework for Highlighting Principles Common to Written, Oral, and Visual Communication. University of Washington, Professional Communication Conference (IPCC), 2016 IEEE International, https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7740494

Julian Treasure: How to speak so that people want to listen https://www.youtube.com/watch?v=eIho2S0ZahI&feature=youtu.be&t=4m15s

