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2021 KU Leuven Facing the Future: “How to increase societal impact?”  
<https://rega.kuleuven.be/cev/Symposium/facing-the-future/Program-2021>  
Leuven, 5 May 2021

Proceedings of the parallel session “Honours Programme Transdisciplinary Insights” (TDI 2020-2021)

#### Program

17h15 – 17h20	Introduction by the Institute for the Future
17h20 – 17h45	STEAM+: Transforming higher education through collaborative play
17h45 – 18h10	InclusiVaart. (Re)defining shared neighborhood spaces
18h10 – 18h35	Conceptualising Open Science in the 21st Century
18h35 – 19h00	Coronavirus Pandemic Preparedness

## STE(A)M+: Transforming Higher Education through Collaborative Play

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### Abstract

Our world is facing various wicked problems, such as climate change and extinction. These complex problems require an in-depth understanding. STEM disciplines in higher education play a crucial role in preparing students to solve such problems in their career. Yet it can be questioned whether STEM in higher education offers all the elements required to prepare students for a sustainable future. Additionally, a sole focus on STEM fields may not contribute to finding solutions to these problems. With STE(A)M in higher education,

we explore what the missing element in higher education is and how higher education can be improved. We addressed this question within the Honours Programme Transdisciplinary Insights of the Institute for the Future at KU Leuven. Within this programme, a team of students, PhD researchers and coaches from various disciplines examined the educational system and explored how students can be better prepared to co-create a more sustainable future. This learning path was supported by reading books about systems thinking, watching documentaries, following co-creative workshops, and engaging in team discussions. In this process, we found that the following four key elements could be given a greater emphasis in education: transdisciplinarity, systems thinking, co-creation, and critical thinking. To promote this, we created a board game that aims to make learning about the importance of these elements engaging. While playing this game, we learned that we can bring students from different disciplines together and foster critical thinking and reflections. These insights illustrate how creative tools (e.g.

board games) can be used in higher education to foster important skills that can prepare students for a sustainable future. Since this game, developed by students for students, is entirely learner-driven, it departs from the current educational system in which knowledge is mainly transferred by professors. An important advantage of such initiatives is that they foster co-creation and learning between students. Our findings have been summarised in a small video.<sup>1</sup>

### **Key words**

sustainable higher education, games, transdisciplinarity, systems thinking, critical thinking

### **Title of the original challenge**

STE(A)M in Higher Education  
(<https://rega.kuleuven.be/tdi/tdi-challenges/steam-in-higher-education>)

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<sup>1</sup> The video was presented at the Symposium 'KU Leuven Facing the Future', Leuven, 5 May 2021, and is available on [https://kuleuven.mediaspace.kaltura.com/media/TDI\\_STEAM\\_video\\_final\\_2020\\_201/1\\_a4sqacyc](https://kuleuven.mediaspace.kaltura.com/media/TDI_STEAM_video_final_2020_201/1_a4sqacyc)

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18h10 – 18h35 Conceptualising Open Science in the 21st Century  
18h35 – 19h00 Coronavirus Pandemic Preparedness

## InclusiVaart: (Re)defining shared neighbourhood spaces

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### Abstract

Cities and dense urban areas are dynamic environments, always adapting to changing circumstances and shocks, such as the recent COVID-19 pandemic. Vaartkom, a neighbourhood in Leuven, provides an interesting case-study, having undergone a drastic transformation in the past two decades, from dilapidated

industrial zone to residential quarter and cultural hot-spot. This has introduced a demographic shift, which inevitably influences the use of public and private space in the neighbourhood, creating new areas for inclusion and exclusion. Our research focuses on how the use of public space has changed under COVID-19, and how community members envision their neighbourhood in a post-COVID context. We employed various methods – such as interviews, site visits, stakeholder and physical mapping exercises – and worked with the community to identify the different areas of in- and exclusivity. Some findings relate to the conflicting expectations about the use and future of public space and the link between the location of public engagement and the level of inclusiveness. This illustrates the magnitude and consciousness of the effort required to be truly inclusive. Above all,

our own understanding of inclusivity broadened significantly over the duration of the project, illustrating the clear advantage of using a transdisciplinary approach in research. Our findings have been summarised in a small video.<sup>1</sup>

### **Key words**

transdisciplinarity, inclusivity, urban neighbourhoods, post-corona, public space

### **Title of the original challenge**

Inclusive environments in a post-corona context  
(<https://rega.kuleuven.be/tdi/tdi-challenges/inclusive-environments-in-a-post-corona-context>)

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<sup>1</sup> The video was presented at the Symposium 'KU Leuven Facing the Future', Leuven, 5 May 2021, and is available on [https://kuleuven.mediaspace.kaltura.com/media/TDI\\_InclusiVaart\\_2021/1\\_tzrzp5s2](https://kuleuven.mediaspace.kaltura.com/media/TDI_InclusiVaart_2021/1_tzrzp5s2).

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18h35 – 19h00 Coronavirus Pandemic Preparedness

## Conceptualising Open Science in the 21st Century

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### Abstract

Open Science that is adaptive to the complexity of the 21st century is emerging in transdisciplinary institutions outside of academia. Despite its growing popularity and plurality as a movement, the scope in which Open Science is practiced and discussed inside academia is still mostly restricted to the scientific community and fragmented between disciplinary silos. Researchers and policymakers promoting Open Science often focus on knowledge translation and still recognise experts and academia as the main producers of knowledge, essentially closing the research process to non-researchers

and preventing other perspectives from being integrated into knowledge production. Our aim with this project was to adopt a systems perspective to understand how Open Science can address the challenges in the current knowledge production system. Open discussions among the team members revealed distinct understandings of what constitutes Open Science. Thus, during our process we collated these many definitions of Open Science and extracted the dimensions that underlie such definitions and mapped how these dimensions could be interconnected in a more comprehensive conceptualisation of Open Science. Future iterations of the challenge could build on our reflections and explore how these Open Science dimensions translate into scientific practice and how researchers

can be encouraged to reflect on Open Science in a more systems-oriented way. Our findings have been summarised in a small video.<sup>1</sup>

### **Key words**

reproducibility, systems approach, knowledge production system, sustainable research model, research wast

### **Title of the original challenge**

Open Science and Reproducibility  
(<https://rega.kuleuven.be/if/open-science-and-reproducibility>)

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<sup>1</sup> The video was presented at the Symposium 'KU Leuven Facing the Future', Leuven, 5 May 2021, and is available on [https://kuleuven.mediaspace.kaltura.com/media/OpenScience\\_video/1\\_yqx2mvbt](https://kuleuven.mediaspace.kaltura.com/media/OpenScience_video/1_yqx2mvbt).

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## Uprooting Deeper Causes of Belgium’s Lack of Pandemic Preparedness in the Covid-19 Crisis

**Séverine Bouvy**<sup>1,2\*</sup>, **Lise Ceulemans**<sup>1,3\*</sup>,  
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**Maria Nankova**<sup>1,6\*§</sup>, **Tam Nguyen**<sup>1,7\*</sup>, **Jan-Peter Sandler**<sup>1,8\*</sup>,  
**Tim Van Laere**<sup>1,9\*</sup>, **Anne-Mieke Vandamme**<sup>1,10,11§</sup>, **Jef Baelen**<sup>1,12#</sup>, **Joachim Langerae**<sup>1,12#</sup>, **Pieter Thyssen**<sup>1,10,13#</sup>

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## Abstract

The challenge of the Coronavirus Pandemic Preparedness project was to explore gaps in the way Belgium addressed the COVID-19 pandemic as a path forward for learning how to be better prepared in the probable event of a future pandemic. A pandemic is more than just a health crisis; well-intentioned efforts to contain an epidemic resulted in mental health problems, an economic downturn and the impairment of learning, among other issues. To understand a complex or “wicked” problem, such as a pandemic, we deployed a transdisciplinary approach, engaging experts and stakeholders from a variety of fields. At the end of March 2021, we organised an online co-creation workshop on behalf of the transdisciplinary research team at the Institute for the Future (1), inviting societal actors to participate in a multilevel brainstorming discussion. The purpose of the workshop was to identify deeper causes underlying the gaps in Belgian pandemic preparedness, building upon earlier work of the research team. We engaged stakeholders from different sectors of society in interactive exercises to verify and challenge the work of the research team. As a result, our team unearthed plausible missing elements within the deeper causes underlying the Belgian lack of preparedness for the pandemic. The majority of gaps identified by the stakeholders could be traced to deeper causes interwoven

in our society’s fabric. Some key areas where improvement was suggested were greater political willingness to tackle more complex problems, an expansion of transdisciplinary knowledge and education across our institutions and trust-building among citizens, government and the scientific community. Our findings are summarised and presented in a short video output.<sup>1</sup> These findings can be taken up to formulate future objectives for pandemic preparedness in Belgium. This can in turn serve to create a more resilient and sustainable society.

## Key words

pandemic preparedness, Belgium, future, transdisciplinary research, stakeholder engagement, co-creation workshop, COVID-19

## References

1. [https://rega.kuleuven.be/if/coronavirus\\_challenge](https://rega.kuleuven.be/if/coronavirus_challenge)

## Title of the original challenge

“Coronavirus Pandemic Preparedness”  
(<https://rega.kuleuven.be/tdi/tdi-challenges/coronavirus-pandemic-preparedness>)

<sup>1</sup> The video was presented at the Symposium ‘KU Leuven Facing the Future’, Leuven, 5 May 2021, and is available on [https://kuleuven.mediaspace.kaltura.com/media/TDI\\_Coronavirus+Challenge+2020\\_2021/1\\_nvzqv1ik](https://kuleuven.mediaspace.kaltura.com/media/TDI_Coronavirus+Challenge+2020_2021/1_nvzqv1ik).