



CENTRE FOR UNUSUAL COLLABORATIONS

ANNUAL REPORT 2023













2023 at a glance

This annual report offers updates on:

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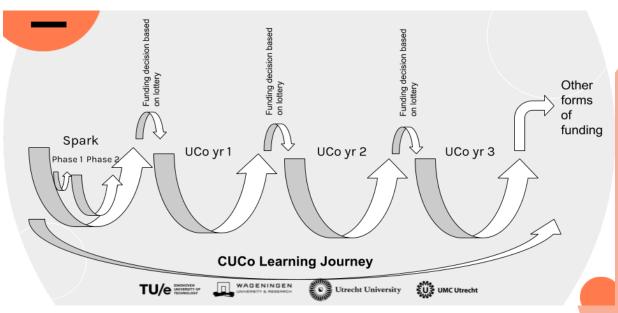
Across the report you will find insights on collaborations that we gathered during the year.

In the Annex an overview of the Spark teams and Unusual Collaborations 2023 is available.

2023 in numbers

- 4 new Spark teams, involving 20 mid-career academics
- 7 Unusual Collaborations funded, involving 71 mid-career academics
- participants in four runs of the Spark training
- 50 participants danced the CUCo dance at the opening of CUCo's Tentacular Future Festival
- 4 trainers became part of CUCo's trainer pool
- ritual on collaboration across boundaries co-organized with the University of Humanistic Studies at Betweter Festival
- 1:15 minutes to explain CUCo's vision and values: CUCo animation

The CUCo learning journey: Spark to Unusual Collaborations

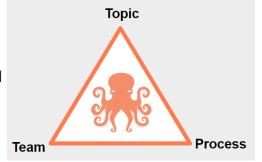


CUCo offers two funding schemes: Spark (phase one and phase two) and Unusual Collaborations (UCo). Researchers who participate in the first two Spark phases can subsequently apply for an UCo grant. UCo grants are granted for a maximum of three, not necessarily consecutive, years.

Insights on collaborations: CUCo's unusual trinity

Think of academic funding schemes, and immediately one's mind goes to 'the what' - the grant call's theme, the topic, the problem. But that sort of focus alone can reinforce path-dependency and hinder the inclusion of new and divergent perspectives.

At CUCo, we seek to decentre this conventional focus on 'the what' by giving equal attention to 'the who', 'the what' and 'the how'. We call this the unusual trinity: topic, team and process.



We support interdisciplinary research teams comprised of scholars from very diverse disciplinary backgrounds who are keen to truly learn from and with each other. And we support them with harnessing existing practices and co-creating new ones to be able to really do that.

Highlight: 1+1=3, a CUCo documentary!

After 1,5 years of production CUCo presents with due pride its documentary '1+1=3'. In this short documentary the Unusual Collaboration 'Structures of Strength' is followed. The documentary takes the viewer on a journey with this research team and the Centre for Unusual Collaborations, to explore barriers to working across disciplines, as well as ways to overcome them. Watch the trailer or the full documentary.

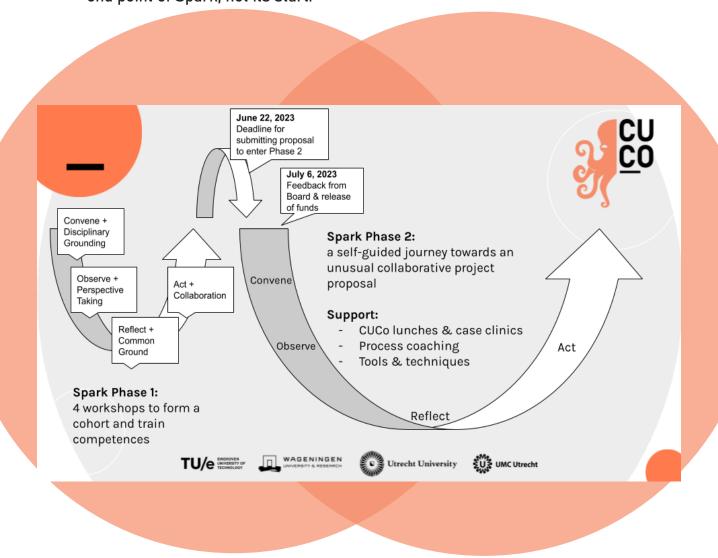




1. Spark grants

Spark consists of two phases:

- Phase 1 is a training on interdisciplinary competences. Teams emerge from the cohort. Additional members can be added later from beyond the cohort.
- Phase 2 is entered with a team that continues to shape up. A research idea is the end point of Spark, not its start.



Four enthusiastic new <u>Spark teams</u> emerged through the Spark training, composed of representatives from wide ranges of disciplines who did not know each other beforehand.

- My Choice Matters
- [UN]BOX: Unpacking, cocreating, and materialising collaborative research processes for shared learning, purpose and impact
- Interdisciplinary explorations of a complex systems approach to study socio-technical challenges
- I.M.P.ACT. Interdisciplinary Movement Powering ACTion

Please find two teams highlighted below and summaries of all four teams in the Annex.

Highlight: Spark project Complexity

"We propose to examine diverse approaches to understanding complex real-world issues. By integrating social and natural science perspectives and approaches with complexity science, we aim to develop new and unusual ways to study complex real world socio-technical phenomena.

Society can be viewed as a complex system, with a large number of factors to consider such as feedback interactions, adaptation, and emergence - development of properties and behaviors that individual elements do not have. Societal and socio-technical phenomena have become increasingly characterised in terms of complex systems, which comprise a mixture of natural and social elements. Complex systems approaches encompass various quantitative and qualitative methods to explain, predict and anticipate different phenomena.



We will explore what we can learn from complex systems approaches from both the social and natural sciences, and how we can integrate these with other approaches from the team members' (and potentially other) research disciplines. A more integrative approach to taking complexity into account may prove fruitful for understanding today's real-world challenges. We will explore application to relevant and urgent topics, such as inequalities in healthcare, societal uptake of novel technology and community resilience."

Highlight: update from the Unbox team



Jillian Student (She/Her) • 1st WIMEK Postdoctoral Researcher on Transdisciplinary Research and E... 6то • 🕥

The big day of our [un]box Spark retreat @ \$\dag{\left}\$



Jonas Torrens, Federico Andreotti, Dan Lockton, Merijn Bruijnes and I spent a full day and evening materializing some of our ideas for providing support to collaborative processes.

We determined the first priorities of our visualizations, we tried out the metaphorical spaces Niva van de Geer created for us, we pondered, we protyped, we 3d printed (!!!!), we crashtested, we reflected, and we ate very

And after a very long (and fun) day, my collaborators kindly agreed to play just one more game at end of it and we Jenga'd (💚).

Thanks to the Centre for Unusual Collaborations (CUCo) for supporting this process and unusual collaboration.

#unbox #CUCo #Sparkgrant #unusualcollaborations #tentacularspectacula





Spark phase one: training on interdisciplinary competences

- 20 participants in 2023
- 7 from Wageningen University and Research
- 6 from Utrecht University
- 4 from UMC Utrecht
- 3 from Eindhoven University of Technology
- 4 Spark teams formed



Testimonials

"I'd describe it as group training in which the brain and body are activated in unusual ways to experience new ways of thinking, talking, listening, and conversing - all contributing to improving collaboration skills."

"Inspiring and challenging training where you truly step out of your comfort zone to enter a connecting and learning zone."

"It was fun! The training has been the opportunity to carve some space and time for a few weeks to think outside the box and meet people from different background and disciplines, that I do not usually meet in my academic work."

Reflections

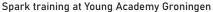
- While the training is received well by participants, recruiting a consistent stream of participants is a point of attention. Partly this requires better communication, to make sure that researchers that are eligible, are aware of the Spark training and funding possibility.
- The training requires a time investment on the part of the participant, which raises a barrier. At the same time, the training offers interdisciplinary leadership skills, networking and (low-threshold) access to funding. CUCo evaluates how this balance plays out for the participants.
- Current Recognition & Rewards schemes are not geared towards acknowledging interdisciplinary learning and research efforts as much as they do mono-disciplinary effort, and making it more challenging for researchers in tenure track positions to participate.
- CUCo continues to develop the training formats in collaboration with newly trained Spark trainers, to ensure the training caters for a wide range of researchers from diverse disciplinary backgrounds.

Training offer beyond Spark

By popular demand the training has also been offered to:

- Eleven alliance colleagues to get them acquainted with CUCo's experimental nature and its approach to interdisciplinary competences. This has led to several other EWUU initiatives adopting and re-applying methods from the training in their own events and support for research teams.
- By invitation from the Young Academy (YA) Groningen, we also ran a 2-day Spark training for YA members in Groningen in June 2023, in which eight scholars participated. We met with great enthusiasm and the course will be offered again in Groningen in 2024.
- A summary of the training has been ran at YA Leiden, who were very keen to get acquainted with CUCo and our training & funding approach.







Spark training for alliance colleagues

Insights on collaborations

We observe three types of interdisciplinary research in our Spark and Unusual Collaborations teams:

Interdisciplinarity first: teams that start from the desire to collaborate and to expand into interdisciplinary work. The team works on a topic on which they find a common ground in terms of their respective knowledge and skills.

Problem first: teams that collaborate to address more complex scientific and/or societal problems that reach beyond their individual disciplinary boundaries. The complementarity of the knowledge of the team members allows for addressing the problem from other perspectives.

Concept first: teams that approach a central concept from their respective disciplinary approaches, so as to bridge disciplinary knowledge or acquire more cross-fertilization.

The different starting points also make clear that not all interdisciplinary research is primarily aimed at societal problems, it can also be curiosity-driven.



2. Unusual Collaborations

Seven projects have been selected for the Unusual Collaboration (UCo) grant scheme through a lottery to distribute €1 million in research funding (see below for more information on the lottery). The teams are at different stages of development. Funding is limited to three years. For two projects this was therefore the last period of (C)UCo funding.

Post-Spark, 1st year UCo

- Clean Future: Wellbeing in "dirty work" €130k
- Imagining More-Than-Human Communities €62k
- Plasticity: Here, there, everywhere €164k



2nd year UCo All in the Same Boat: From 'water everywhere' to 'not a drop to drink'? - €180k



Playing with the Trouble: A travelling library for transformative play - €180k



3rd year UCo Defeating Chronic Pain: Towards a chronic pain expertise platform - €164k



The Power of One: Towards the representation of unheard and unseen individuals in the hospital, workplace and neighbourhood - €156k





Handshake grants

Three teams were not selected through the lottery. They received an equal share of the remaining funds: €21k in total. The handshake grants serve to avoid that projects need to fully dissolve suddenly. The funds can be used to keep some gathering and activities going instead.

- Structures of Strength (after two years of UCo funding)
- FAIR-Battery Challenge (after one year of UCo funding)
- Smart Origami meta-materials for diagnosis and treatment of gastro-intestinal diseases (post-Spark)

Please find two teams highlighted below and summaries of all seven funded teams in the Annex.

Highlights: UCo projects

Plasticity, here, there, everywhere

Contemporary society is established on a principle of ever-increasing resources, affluence, and possibilities, from food and energy to personal ambitions. However, repeated shortages and impasses test our society's resilience. Plasticity is used to describe adaptation to external stimuli while fostering resilience at multiple levels, from the societal to the individual, organism and cellular, and even the molecular. We will determine the common and diverging patterns of plasticity in our respective research fields, spread the knowledge and raise public awareness of the issue of resilience through a process led by team members and executed by corresponding master interns.

All in the Same Boat: From 'Water everywhere' to 'not a drop to drink'?

The previous CUCo-funded work inspired to take on an ambitious new goal in 2023. Specifically, we identified a gap in water-security-related research questions and approaches that involve society and the general public. Consequently, we will collaborate with the Nederlands Water-museum to explore ways to address this gap (e.g., via expositions or teaching materials). Our team is diverse and not only includes experts working directly on water, but also those with knowledge of chemistry, ecology, law, etc. With our new societal partners, we are well positioned to create impact and contribute to future water security in the Netherlands.





Lottery to decide on funding

CUCo handed out its budget of €1M for Unusual Collaborations in an innovative manner. The decision on funding was left to a lottery, which resulted in seven out of eleven expressions of intent receiving funding. CUCo has chosen for a lottery because:

- Trust is a key element in all collaborations; teams that apply have the full trust of CUCo that they will come up with projects that will explore unknown terrains in manners that are considered most suited by the team and that will showcase what the added value is of unusual collaborations:
- The funding budget is limited and selection will have to be done; it will no longer be possible to fund all eligible teams. Comparison in the assessment across the variety of existing UCo projects (i.e. those that have been ongoing for one or two years already), and the Spark teams is not fair;



- A lottery does not require fully worked out research proposals; submissions can be limited to brief expressions of intent. CUCo recognises that the nature of interdisciplinary research is emergent and that it therefore makes no sense to ask for fully detailed proposals before the start of the project;
- Lottery based on brief expressions of intent saves time for all involved: applicants, reviewers, and the CUCo team. Time that CUCo rather sees spent on the fantastic projects it funds;
- Lottery avoids bias in the selection and as such is a more inclusive funding method: all projects stand equal chance, regardless of conscious or unconscious bias with regard to disciplines or background of applicants;
- Lottery as a selection method has been studied, with positive response, but sees limited implementation. CUCo is meant for experimenting with and changing academic and funding structures, which makes it one of the few spaces where this can be implemented. CUCo chooses to be unusual, also in its selection method.

Highlights from UCo teams

Defeating Chronic Pain project event at Institute for Advanced Studies

Defeating Chronic Pain: towards a chronic pain expertise platform to defeat chronic pain

The Chronic Pain team, together with writer and journalist Sanne Bloemink hosted an event at the Institute for Advanced Studies (IAS) in Amsterdam. Sanne talked about her experiences as a chronic pain patient and about her book Pain. Sylvia Brugman showed what the multidisciplinary team is researching and how difficult and fantastic it is. Conversations were had about the medical pain model, the biopsychosocial model, and a DJ table as a metaphor for this.

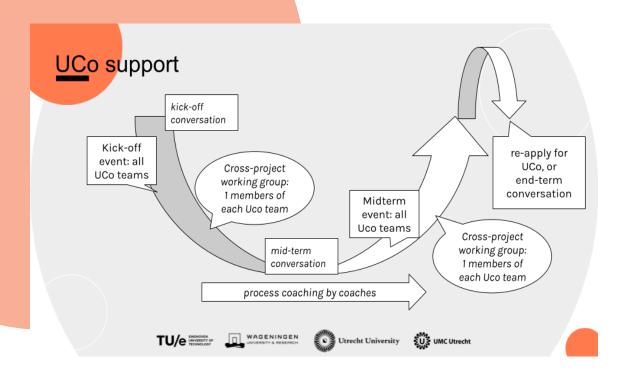
Patients, philosophers, immunologists, linguists, neurologists, artists, anaesthesiologists and patient representatives all brought in their own perspectives. One of the things that emerged: everyone has a different definition of chronic pain. Some think a definition is important because they have to work with it. Others find it unimportant because it's time to move on. If it is accepted that the definition is fluid and changeable then that is ok. Everyone has their own language for pain, to make it understandable, to be able to share it, to work with it, to be able to research it. Being open to each other's language should help more patients. Amongst the participants, one in five was a chronic pain patient. Join forces and on to large-scale interdisciplinary research!

Betweter Festival Utrecht - High-Five with a Non-Human Experiment

On 29 September 2023, the Imagining More-than-Human Communities team ran an experiment at the Betweter Festival in Utrecht. Attendees were invited to explore a new haptic interface and imagine what it would mean to interact with a nonhuman entity remotely via the medium of technology. We asked participants to reflect on how technology can help us feel more connected with the non-human world.







Insights on collaborations

Across the range of Spark and UCo teams we see three out of eleven of the teams focusing on **me-ta-science topics**. Not only are teams funded through CUCo doing inter- and transdisciplinary research, they are also studying the process of collaboration and contributing to it by offering tools and approaches.

What are these teams working on:

Playing with the Trouble: The interdisciplinary team of ten researchers have been co-designing card decks and other playful materials and activities that can support transdisciplinary collaborations. [UN]BOX: Unpacking, cocreating, and materialising collaborative research processes for shared learning, purpose and impact.

Highlight: CUCo support to UCo teams

CUCo has set up a support process for UCo teams, which starts after the funding. The aims of which are:

- Sharing of information on progress of UCo teams
- Coaching of teams where needed and possible to overcome barriers
- Learning of lessons of UCo teams on inter- and transdisciplinary collaboration for CUCo, so as to make those lessons available to others and refine support mechanisms
- Peer-learning across the cohort of teams, specifically in relation to the process of collaboration
- \cdot If possible, cross-project output is identified and developed

Update meetings at kick-off and midterm take place between UCo teams and CUCo team directly. The kick-off and midterm meetings are with all teams together. A cross-project working group, with representatives of each project meets three times a year.





3. CUCo as a centre of expertise and training

CUCo strives to be and become a centre of expertise and training on (the process of) inter- and transdisciplinary collaboration.

Trainers' pool

CUCo's training on interdisciplinary competencies sees great interest, within and beyond the alliance. To be able to meet this demand CUCo has composed a pool of trainers, who have followed a train-the-trainer approach. The pool consists of four Spark and UCo team members that are enthusiastic about interdisciplinary research and the training. The pool is to be extended with others that raise their hand. The trainers are available for the regular Spark training, and they can be hired by interested parties.

Supporting fair, inclusive and equitable transdisciplinary collaborations

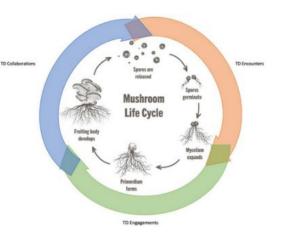
A team of experts from across the alliance institutes conducted a scoping study for CUCo, which led to an advice report. The aim of the scoping study was to increase CUCo's understanding of transdisciplinary research, in order to facilitate and support transdisciplinary collaborations that are fair, inclusive and equitable.

Part of the advice report are below principles that foster meaningful transdisciplinary collaborations:

- ddress (context-specific) societally relevant issues while maintaining scientific relevance
- Embrace complexity, ambiguity, and uncerainty
- Value and harness plural ways of knowing via
 co-creating and co-learning
- Involve diverse relevant actors in inclusive,
 air, and equitable ways

Unusual collaborations cross boundaries and offer equal attention to all three elements of the 'un-

usual trinity': topic, team and process. In its first stage, CUCo decided to focus primarily on interdisciplinary research collaborations. CUCo, recognizes, however, that for research to be able to address complex challenges, knowledge other than academic knowledge is needed. For this, transdisciplinary approaches are required. To be able to support transdisciplinary collaborations in responsible ways, CUCo commissioned the scoping study. Please find the report here.



Highlight: Collaboration with alliance colleagues

Key to CUCo's mission is collaborating with our colleague alliance initiatives. We were glad to do so in the following ways:

- We offered the **Spark training on interdisciplinary competences** to ten of our colleagues. So as to enable the use of our method across the alliance. Collectively the cohort trained in disciplinary grounding, perspective taking, finding common ground and integration. Meanwhile, linkages across the initiatives were identified, what a great way to get to know our colleagues better. It was fun!
- Alliance colleagues have adopted some of the exercises as conducted during the training in their own
 activities, for example our colleagues from Preventive Health in their annual conference.
- Together with colleagues from Education, Circular Societies and the alliance program team we developed a summer school around the 'Inner Development Goals for Sustainable Futures', Due to low registration we had to cancel it, unfortunately, but we ran a one-day training with a selection form the training to a group of very enthusiastic participants!
- At the **EWUU conference** a session was co-organised between CUCo and Preventive Health on 'Empathy-driven living lab design: engaging stakeholders for impact'
- With a group consisting of colleagues from across the alliance initiatives we have **reviewed and aligned** the funding scheme for seed calls in a joint trajectory.



Spark training for EWUU alliance colleagues



4. Events (co-)organized by CUCo in 2023

Storytelling for Collaboration Workshop (20 participants)

Collaboration is often talked about as if it is a magical process, an alchemical melding of brainpower and willpower that yields amazing outcomes. Well, sometimes it is and sometimes it isn't. Collaboration may be alchemical, but it is also hard work and carries no guarantees of success. The workshop used the power of storytelling to help participants explore the collaboration mindset.

CUCo's Tentacular Future Festival (50 participants)

This year we time traveled to the future! We explored, experienced and imagined the potential as well as challenges of the future of collaboration. How will these evolve, between humans, machines and more-than-human communities. Where are we now and where are we heading? Some of our projects conducted their (time travel...) data collection! Watch the aftermovie here.



Embracing multiperspectivity (2 x 15 participants)

What can we learn from artists in our daily struggle when collaborating with others? How do we create an open space where other ways of knowledge can arise? In this workshop we dug into the world of collaboration while stepping into the artist's mindset. The workshop aimed to connect to the self, the other and the world around us by means of art.

TRED conference (150 participants)

In this interactive conference, co-organised by the Wageningen Institute for Environment and Climate Research and CUCo. inter- and transdisciplinarity were not just discussed, it dug deeper into the fundamentals of its science, created a safe space Integrate Wednesday - day three of for dialogue, made time for hands-on explorations, and through mini-hackathons. Read more here.



the TRED conference. Photo by Chad Osorio, TRED team

Screening 1+1=3, CUCo's documentary (57 participants in total)

The documentary was screened, followed by a facilitated discussion about (individual experiences with) recognition and appreciation with regards to interdisciplinarity. The documentary is especially relevant to policymakers in academic institutes, research funders, and researchers with an interest in interdisciplinary research At EWUU conference: 25 participants, at UMC Research Days: 20 participants, at TU/e Disruptor festival: 12 participants.

Grand opening CUCo's Nest Wageningen (40 participants)

CUCo's Nest at StartHub was officially opened. Participants experienced playful experimenting with diverse techniques that facilitate interdisciplinary engagement from CUCo's toolbox.

CUCo contributed to the following events with sessions on collaborations:

UNLimited Festival – EWUU Conference 2023 – NIE Conference – Betweter Festival – EWUU General Assembly spring meeting – EWUU General Board meeting – NWO symposium 'Towards Impactful Biodiversity Research: Initiating Interdisciplinary Collaborations' – Klimaatonderzoek Initiatief Nederland prep-event Crutzen workshop – CHARM European University Cross-Alliances Forum 2023



CUCo's Let's Get Unusual session at EWUU conference 2023

5. Output

CUCo's Roadmap for 2024-2027 was accepted!

CUCo animation: 'What is the Centre for Unusual Collaborations?'

CUCo's documentary 1+1=3, see the trailer or the full documentary

Publications

Sassen, J., Lamain, C, van Gemerden, F (2023). Transdisciplinary Research: If it's so important, why aren't we all doing it?, AWTI newsletter.

Corinne Lamain and Jillian Student (2023). Breaking down walls while building room(s) for transdisciplinary collaborations in academic spaces (to be published, by invitation of 'Integration and Implementation Insights' https://i2insights.org/).

Corinne Lamain and Jillian Student (2023). More than words can say: embodied and creative practices for creating connection (to be published, by invitation of "Integration and Implementation Insights")

Annisa Triyanti, Corinne Lamain, Jessica Duncan and Jillian Student (2023). My knowledge has the same value as yours; fair, inclusive and equitable transdisciplinary collaborations (to be published, by invitation of 'Integration and Implementation Insights').

CUCo covered in media

Corinne Lamain interviewed, in: Mangnus, E (2023)

<u>Planetary Health: Transdisciplinary cross-pollination</u>, Vice Versa, p 36-38.

Corinne Lamain interviewed, in: Klimaatrechtvaardigheid als basis: <u>'Je moet het licht laten schijnen op de hele keten'</u> website Klimaatonderzoek Initiatief Nederland.



6. Internal organization

CUCo board

We have welcomed two new members to the CUCo board:

Inge Stegeman, UMC Utrecht Ayoub Bagheri, Utrecht University

Three board members stepped down, and we heartily thank them for their considerable efforts for CUCo:

Pooyan Tamimi Arab, Utrecht University Meghann Ormond, Wageningen University and Research Max Birk, Eindhoven University of Technology

Supervisory board

The CUCo Supervisory Board was installed in June:

Jack van der Vorst, Wageningen University and Research Patrick Anderson, Eindhoven University of Technology Elsken van der Wall, UMC Utrecht Thomas Vaessens, Utrecht University

CUCo team

Caspar Schoevaars left his role as CUCo's tentacular policy officer. We thank Caspar for the energy he brought to CUCo. We welcome Tom Bouwmeester who has joined CUCo as secretary.



The CUCo board and team have encountered some challenges in the collaboration and were as such practicing their own motto "Staying with the trouble". We have learned through our own experience that indeed it is no easy trait to collaborate across boundaries! The Board and team are putting their efforts where their mouths are and are working on rebuilding trust and creating a space where everyone can thrive.



Annex A: Spark teams in 2023

I.M.P.ACT. Interdisciplinary Movement Powering ACTion

"We want to make an IMPACT in life and research, however, often our IMPACT is only measured in our specific research area. The concept of IMPACT is also understood in sometimes even conflicting ways between different disciplines. As a consequence, even though innovations and developments are generated with the best intentions, IMPACT beyond our specific area is often not taken into account. To fully understand this topic an overarching, unusual collaboration is needed to truly innovate and design with all life in mind. By combining qualitative and quantitative research we will explore means towards mapping IMPACT between direct and indirect, human and non-human stakeholders."

Interdisciplinary explorations of a complex systems approach to study socio-technical challenges

"We propose to examine diverse approaches to understanding complex real-world issues. By integrating social and natural science perspectives and approaches with complexity science, we aim to develop new and unusual ways to study complex real world socio-technical phenomena. Society can be viewed as a complex system, with a large number of factors to consider such as feedback interactions, adaptation, and emergence – development of properties and behaviors that individual elements do not have. Societal and socio-technical phenomena have become increasingly characterised in terms of complex systems, which comprise a mixture of natural and social elements. Complex systems approaches encompass various quantitative and qualitative methods to explain, predict and anticipate different phenomena."

My Choice Matters

"Isaac Asimov once said that a colleague may hold the solution to a difficult problem without even realizing it. As we face complex and uncertain sustainability issues that require input from and collaboration across multiple disciplines, it becomes increasingly important to effectively communicate scientific knowledge. However, this can be a challenging task, leaving many feeling helpless in the face of global challenges. That's where we come in with our current work on global challenges related to climate change, animal welfare, and health and nutrition. Our team is dedicated to empowering individuals from lower socioeconomic backgrounds with evidence-based decision-making skills, enabling them to contribute to creating a healthier environment for themselves and others. Having backgrounds from climate change to animal welfare, health, nutrition, and education, we approach global challenges holistically, drawing from a diverse range of backgrounds and perspectives."

Annex A: Spark teams in 2023 (continued)

[UN]BOX: Unpacking, cocreating, and materialising collaborative esearch processes for shared learning, purpose and impact

"A brave team of interdisciplinary scholars combine their expertise to address the contemporary challenge of collaborations between the practitioners and researchers who too often study independently from each other. The team plans to develop a gamified 'process black box' prototype to systematize and translate their understanding of collaborative research processes into an accessible approach that other researchers can benefit from. The team aims to involve participants from adjacent projects in workshops to test and co-create different prototype versions. The project's creative spark is the idea that diverse metaphors can help collaborative research participants design, monitor, and conduct their research initiatives. The team will seek to offer alternatives so groups can discuss their collaborative research journeys, process phases, or project milestones."



Annex B: Unusual Collaborations in 2023

All in the Same Boat: From 'water everywhere' to 'not a drop to drink'?

The All in the Same Boat team was inspired by our previous CUCo-funded work to take on an ambitious new goal in 2023. Specifically, we identified a gap in water-security-related research questions and approaches that involve society and the general public. Consequently, we will collaborate with the Nederlands Watermuseum to explore ways to address this gap (e.g., via expositions or teaching materials). Our team is diverse and not only includes experts working directly on water, but also those with knowledge of chemistry, ecology, law, etc. With our new societal partners, we are well positioned to create impact and contribute to future water security in the Netherlands.

Clean Future: Wellbeing in "dirty work"

With growing attention for labor shortages and employment conditions, it is remarkable that an often-stigmatized form of employment is understudied: "dirty work". "Dirty work" concerns occupations that the society often views as physically, socially and/or morally tainted (e.g., sanitation workers, cargo handlers, or working in a slaughterhouse). Employees associated with this type of work are prone to stress, burn-out, sleep problems and physical health issues. In our project, we aim to reduce occupational, social, and health inequalities by combining expertise on micro (employee), meso (organizational) and macro (labor market) levels. We will identify prominent psychological, geographical, physical, educational, and socio-structural factors that can help to shed light on issues of wellbeing that these workers experience.

Defeating Chronic Pain: Towards a chronic pain expertise platform to defeat chronic pain Chronic pain is complex and cannot be solved by the medical profession alone. We are an interdisciplinary team, consisting of a linguist, psychologist, neurobiologist, immunologist, anaesthesiologist, engineer, veterinarian, behavioural and molecular scientist and combine knowledge and skills to understand chronic pain.

We use our previously designed audio metaphor to facilitate discussions on chronic pain and to create awareness for this major problem. Recently, we uncovered subgroups of chronic pain patients that might benefit from different treatment strategies, and we are setting up techniques to visualize and measure pain. In this grant period we will create a platform connecting knowledge, experts and patients to defeat chronic pain.

Imagining More-Than-Human Communities

Imagine a community of humans and nonhumans. Who would it include? Animals? Robots? What are they doing? Working? Or playing? And who decides? This project explores ways of imagining a more equitable community of humans and nonhumans and how to make it a reality in our everyday lives. We believe that play and playfulness are key means of fostering interspecies communication and understanding. Combining humanities, engineering, and medical expertise in theories and practices of playful interaction with nonhumans our team will develop an interactive "playshop" format to develop awareness and ideas for how we can imagine and experience more-than-human communities.

Annex B: Unusual Collaborations in 2023 (continued)

Plasticity: Here, there, everywhere

Contemporary society is established on a principle of ever-increasing resources, affluence, and possibilities, from food and energy to personal ambitions. However, repeated shortages and impasses test our society's resilience. Plasticity is used to describe adaptation to external stimuli while fostering resilience at multiple levels, from the societal to the individual, organism and cellular, and even the molecular. We will determine the common and diverging patterns of plasticity in our respective research fields, spread the knowledge and raise public awareness of the issue of resilience through a process led by team members and executed by corresponding master interns.

Playing with the Trouble: A travelling library for transformative play

A critical challenge for addressing urgent broad societal issues is to navigate multiple worldviews and perspectives, both within academic research contexts and at the interface of science and society. Spaces that cultivate playfulness can open up participants to express, share, question, and transform how they experience and act in the world. Our interdisciplinary team of ten researchers has been co-designing card decks and other playful materials and activities that can support transdisciplinary collaborations. Our goal is to consolidate these learnings into a "travelling library for transformative play" to circulate widely and enable collaborations to address important societal challenges.

The Power of One: Towards the representation of unheard and unseen individuals in the hospital, workplace and neighbourhood

Researchers and professionals focus on what they perceive as the average individual, which prevents them from recognizing those who fall outside this scope. These unseen and unheard individuals typically have an intersecting complexity of social problems, or belong to marginalized groups. There is a consistent lack of data about the needs of these individuals. In our team, consisting of a social psychologist, industrial designer, cultural historian, cell biologist, methodologist, data privacy expert, and language researcher, we examine the barriers that prevent individuals from being empowered to make their needs and views known to professionals (including researchers, policymakers, and aid workers). We examine barriers related to collecting data from marginalized groups in the workplace, the difficulty of reaching out to a representative set of patients to be included in medical research, and the challenge of reaching out to neighbourhood residents for who new technological solutions (e.g., a virtual library) will be developed.