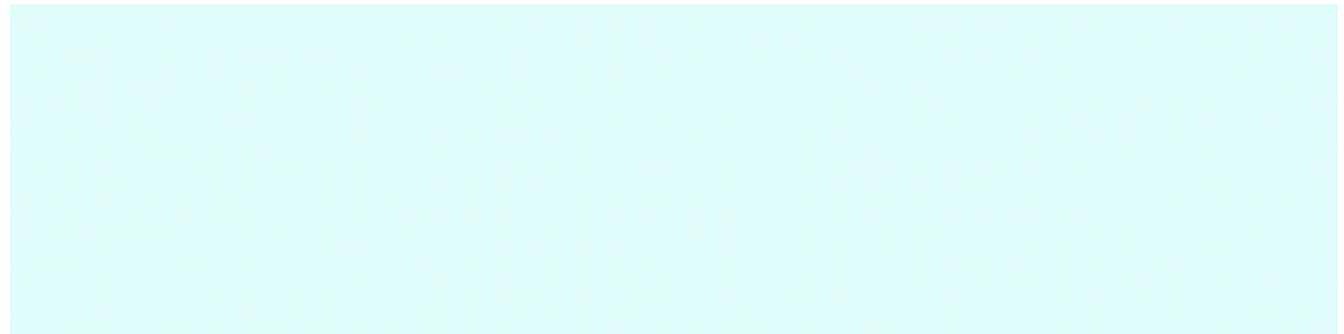


Arts in STEAM 2022 Conference

Author: [Imam Fitri Rahmadi](#)



Call for contributions: artworks, presentations, and workshops

From an education system perspective, a significant role in the development and nurturing of students' curiosity, creativity, problem solving competencies, and collaboration abilities has been assigned to transdisciplinary STEAM education. In that context, the Arts in STEAM 2022 Conference will provide an opportunity for scientific exploration of STEAM education with an emphasis on the role of the arts in that transdisciplinary endeavor.

Researchers, educators, and artists are invited to contribute to this conference in one of the following formats:

1. Arts/creative contributions (any format, visual and performance)

The creative works/arts contribution can be in any format and size, visual-painting, sculpture - digital or performance.

Creative contributions will take place on Thursday from 8:30 CET

[Please find the latest schedule here.](#)

Please find artwork by artists [clicking this link](#).

2. Workshops (games and activities)

Workshops are interactive and practical session that promote skills development, knowledge exchange, and collaboration among participants and workshop facilitators. They aim at inviting you to contribute to the session by getting you active!

Workshops will take place on Thursday from 8:30 CET

[Please find the latest schedule here.](#)

Research presentations will be 10 minutes long with an opportunity to discuss the topic afterwards in depth.

[Scientific presentations on Thursday - Schedule](#)

[Scientific presentations on Friday - Schedule](#)

Schedule

[Complete Schedule in Central European Time \(CET\)](#)

Thursday, January 20, 2022

8:30 – 08:35 **Welcoming Words** – Zsolt Lavicza

08:35 – 11:30 **Interactive Session:** Art, Cognitive Games, and Workshops – Eva Ulbrich

11:30 – 12:00 **Robotic Interfaces** – Johannes Braumann

12:00 – 13:00 **Lunch Break**

13:00 – 17:00 **Scientific Presentations**

13:00 – 13:10 **Opening of Scientific Program** – Zsolt Lavicza

13:10 – 14:00 **Keynote**

Title:

STEAM Powered Circus of Knowledge

Speaker:

Mara Alagic (Wichita State University, USA)

14:00 – 15:30 **Parallel Sessions** – 10 Minutes Presentation, 5 Minutes Discussion

15:30 – 16:00 **Coffee Break**

16:00 – 17:00 **Parallel Sessions** – 10 Minutes Presentation, 5 Minutes Discussion

Friday, January 21, 2022

8:30 – 08:40 **Opening** – Zsolt Lavicza

8:40 – 10:15 **Parallel Sessions** – 10 Minutes Presentation, 5 Minutes Discussion

10:15 – 10:30 **Coffee Break**

10:30 – 10:45 **Introduction to Circus of Knowledge** – Airan Berg

10:45 – 11:35 **Keynote**

10:45 – 11.10

Title:

Using a Posthumanist Lens to theorise ‘Making-with’ in Transdisciplinary Creativities: Exploring the value of ‘Temporal Diffraction’ as a form of analysing (co-) authorings

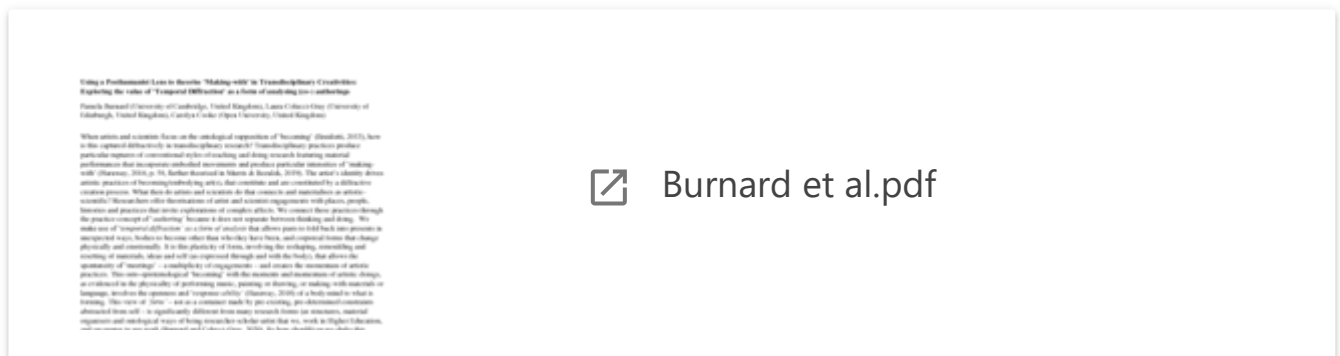
Speakers:

Pamela Burnard (University of Cambridge, United Kingdom)

Laura Colucci-Gray (University of Edinburgh, United Kingdom)

Carolyn Cooke (Open University, United Kingdom)

Abstract



 Burnard et al.pdf

11:10 – 11:35

Title:

Cognitive Development through Creative Problem-solving: Celebrate the 150th Anniversary of Mondrian's Birth with Mondrian Blocks!

Speakers:

Kristóf Fenyvesi (Finnish Institute for Educational Research, University of Jyväskylä)

László Mérő (Eötvös Loránd University, Hungary)

Imre Kökényesi (Smart Egg LTD, Hungary)

Christopher Brownell (Fresno Pacific University, USA)

Elenóra Stettner (Középiskola, Hungary)

Abstract

Cognitive Development Through Creative Problem-solving: Celebrate the 150th Anniversary of Pólya's Heuristics
 Károly Havasi (Eötvös Loránd University Research, University of Szeged) - Csaba Köbl - László Mikó - Zoltán László (University, Hungary) - Áron Kékelyesi (Babes-Bolyai University) - Christopher Remond (Simon Fraser University, Canada) - Shantanu Sharma (Jagadgur University, Hungary)

Pólya's heuristics article, written from the mathematics in New York City, is one of those articles that combine the richness of pure geometrical concepts with the art of painting. To celebrate the 150th anniversary of Pólya's Heuristics, we introduce Heuristics Blocks, an award-winning puzzle and game, which connect the main components of Pólya's work with mathematical fluency and diversity. In this presentation, the creative team of game designers share how they turned a mathematical challenge into an artistic game and the educational insights gained on experience with the mathematical, cognitive, and educational dimensions of Heuristics Blocks. Finally, we introduce our further cognitive games, such as the globally popular board game. We also provide a sneak peek at production of some of the most recent lines of homophony-based games that represent a wide range of painting, play, and open new horizons in cognitive development in the schools and beyond.

 Fenyvesi et al.pdf

11:35 – 12:00 **Discussion** – Reflections moderated by Zsolt Lavicza & Eva Ulbrich

12:00 – 13:00 **Lunch Break**

13:00 – 15:00 **Panel discussion of the Arts in STEAM Conference**

Furthering STEAM Education

Chairs: Zsolt Lavicza (JKU), Kristóf Fenyvesi (University of Jyväskylä, Finnish Institute for Educational Research)

Part 1: **STEAM Around the World**

Paula Vorne (City of Oulu, Finland): The STEAM in Oulu Network

György Darvas (Symmetrion, Hungary): Complex Symmetries in Research and Education

Werner Olivier & Carine Steyn (Nelson Mandela University): STEAM in South Africa

Rosa Cecilia Caro, Sofia Ramirez Soto (Colegio Hacienda Los Alcaparros, Columbia): The Creative Brain Project and the Classroom Thinktank

Part 2: **STEAM in Austria**

Christian Bertsch (University College of Teacher Education Vienna): Vienna, Austria

Doris Arztmann (BMBWF): Vienna, Austria

Marie-Sophie Attems (OeAD, Innovation Foundation for Education, MINT4future): Vienna, Austria

Peter Koller (Alpen-Adria University): Klagenfurt, Austria

Invited speakers



Pamela Burnard is Professor of Arts, Creativities and Educations at the Faculty of Education, University of Cambridge where she Chairs the Arts and Creativities Research Group and runs an online monthly seminar series called 'Performing Research'. She has published widely with 20 books and over 100 articles which advance the theory of multiple creativities across education sectors including early years, primary, secondary, further and higher education, through to creative and cultural industries and transdisciplinary (STEAM) practices.



Laura Colucci-Gray is Head of Institute and Associate Professor in Science and Sustainability Education at Moray House School of Education and Sport, University of Edinburgh. Laura leads the STEAM and Sustainability strategy across Initial Teacher Education and she is co-lead of the Teach Education, Curriculum and Pedagogy Research hub. She has published extensively across the fields of science education, teacher education and sustainability education drawing together issues in science and society with embodied and dialogical approaches in education.

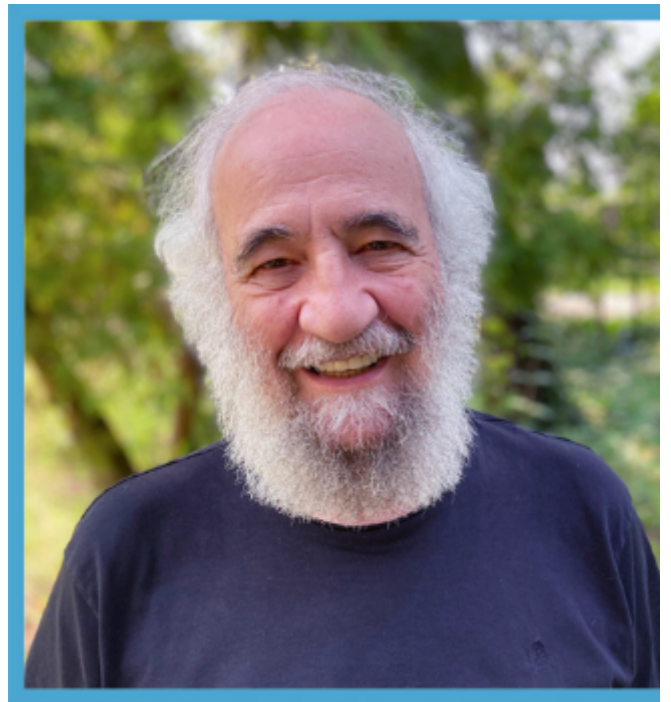


Kristóf Fenyvesi (b. 1979) – is a researcher of STEAM Trans- and Multidisciplinary Learning and Contemporary Cultural Studies in Finland, at the Finnish Institute for Educational Research, University of Jyväskylä. Member of the Research Group for Innovative Learning Environments and Research Group for Education, Assessment & Learning.

Carine Steyn is the Academic Project Co-ordinator for the Govan Mbeki Mathematics Development Centre (GMMDC) at the Nelson Mandela University. She manages the National Math Art Competition Secondary Schools in South Africa as part of the STEAM focus of the centre and the TPACK Professional Development Project for Mathematics teachers in the Eastern Cape.



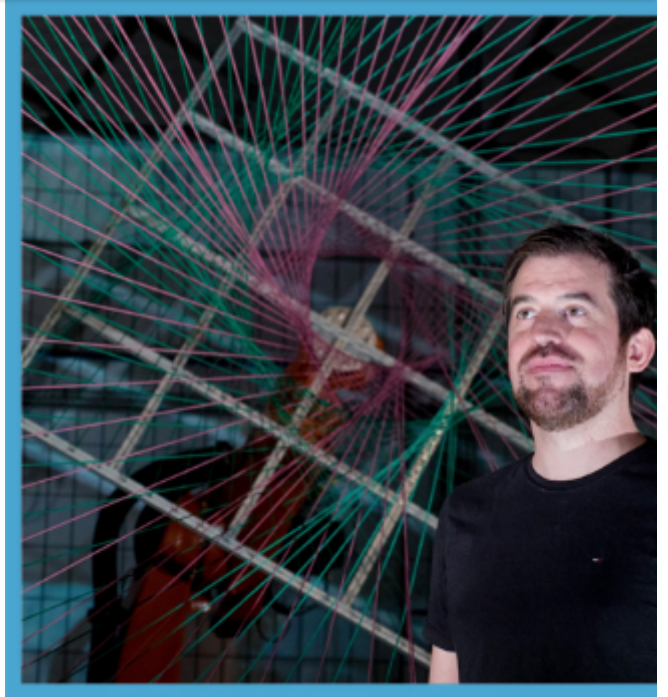
Imre Kökényesi is an electrical engineer by training. He is the producer and creative developer of Mondrian Blocks, Smart Egg, and a number of other cognitive games with great educational relevance. During his professional career, Imre created the Red Bull Rubik's World cup series, and led media and publishing companies in Hungary and overseas.



László Mérő is a professor of psychology at the Eötvös Loránd University, Budapest. His original education is mathematician, then he was an artificial intelligence researcher for ten years before he joined the Department of Psychology. His popular science books were published in 11 languages. He is a game developer, too, had been working on developing several games with Ernő Rubik, the inventor of Rubik's Cube.



Albert P. Carpenter is a mathematical artist. He explores the aesthetics of structure, order, harmony, and symmetry in the creation of geometric and topological sculptures. Recently, he has become interested in using computational creativity in mathematics education software for 3D printing.



Johannes Braumann is a professor for Creative Robotics at UfG Linz, leading an interdisciplinary team of researchers towards exploring robots as a interface between the digital and physical world. He is a co-founder of the Association for Robots in Architecture, Johannes is tightly linked with both robotics and design community. He is the main developer of the accessible robot simulation and programming tool KUKA|prc.



Rosa Cecilia Caro is a philosopher from the Universidad del Rosario, Bogotá, and has a Master's degree in Philosophy. She is a member of the GeoGebra community. <https://www.geogebra.org/m/txxgevnd>



Werner Olivier is a professor and founder-director of the Govan Mbeki Mathematics Development Centre at the University of Johannesburg.

specialization in Collaborative Practices offered by Sistemas Humanos, Bogotá. She is the co-founder of Colegio Hacienda Los Alcaparros and is recognized as an expert on issues of human development, project-based learning, evaluation processes and education for peace.



Paula Vorne is a Primary School Teacher but she currently works as Project Manager for the City of Oulu, Department of Education and Culture. One of her work tasks at the moment is to coordinate the STEAM in the Oulu network which is a growing network of STEAM enthusiastic.

and promotes the scholarship of engagement in I with the goal of improving the quality of teaching and learning of mathematics and physical science schools.



György Darvas, physicist, philosopher; director of Symmetrion; retired from the Hungarian Academy of Sciences and the R. Eötvös University, Budapest; editor of Symmetry: Culture and Science; founder International Symmetry Association. Main fields of interest: symmetries in physics, the sciences and the arts, symmetries in science and art education.

Organising committee



Zsolt Lavicza is a university professor in STEM education research methods at the Department of STEM Education, Linz School of Education, Johannes Kepler Universität Linz Austria. He has worked on several research projects examining technology and mathematics teaching in classroom environments. He has greatly contributed to the development of the GeoGebra community.



Mara Alagic is a professor and graduate coordinator for MEd in Learning and Instructional Design at Wichita State University, USA. She is currently also a visiting professor in the Department of STEM Education at Johannes Kepler Universität Linz Austria. Her research engagements in connecting the arts and mathematics resulted in a leadership role as Editor in Chief of the Journal of Mathematics and the Arts, published by Taylor & Francis, UK.



Eva Ulbrich is experienced with digital
<https://www.geogebra.org/m/txxgevnd>



Branko Andic is a research project manager at

students, and anyone who is interested in learning about 3D printing. She is a PhD student at the School of Education at the Johannes Kepler University Linz.



Imam Fitri Rahmadi is a lecturer at Universitas Pamulang Indonesia and currently a PhD student at the Department of STEM Education, Linz School of Education, Johannes Kepler Universität Linz Austria interested in exploring user-generated microgames for STEM education. Educational technology integration into learning and instruction is his overall research interest.

impairment students. He is interested in research STEAM education and adaptation of its content to students with disabilities. He has been involved in international and 5 national projects in education



Fadhlan Muchlas Abrori is a lecturer at the University of Borneo Tarakan. He is currently a PhD student at the STEM Education Department at Johannes Kepler University Linz. His PhD is funded by the Indonesia-Austria Scholarship Programme (IASP). His research interest is related to digital comics in STEM learning.

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