Session Overview

<u>Session 1 – 25 February, 3:00–4:30pm</u>
Kelly Tzoumis (DePaul University / Johns Hopkins University)
Teaching Resilience and Environmental Democracy Staff Training Program

This presentation provides a comprehensive overview of the essential skills required for effective virtual exchanges, highlighting the Collaborative Online International Learning (COIL) method and other innovative approaches. Grounded in evidence-based pedagogy, it explores how to implement global learning experiences through virtual exchanges, showcasing examples from teaching, research, and Tzoumis's recent edited books that illustrate the successful application of these methods across various educational disciplines. A central theme is the importance of building intercultural competencies applied in a disciplinary framework which are vital for preparing students in an increasingly polarized yet interconnected world. By integrating these competencies into virtual exchanges, faculty can equip students with the necessary tools for effective and empathetic communication across cultures while engaging in their subject matter. The presentation highlights the integration of various academic disciplines as a means to enhance learning outcomes, fostering interdisciplinary collaboration that encourages critical thinking and problem-solving. Practical tools and field-based solutions encountered by faculty engaged in virtual exchanges are also discussed, including technology platforms, useful technology and faculty approaches, assessment strategies, and best practices for facilitating cross-cultural interactions. Professional venues for publishing research on virtual exchanges is included. This presentation serves as a valuable guide for faculty looking to enhance their teaching and research through virtual exchanges, focusing on evidence-based strategies, intercultural competency development inside a subject matter, and practical solutions to create impactful global learning experiences that prepare students for success in a complex, globalized world.

Kelly Tzoumis, Professor Emerita Via Sapientiae with distinction at DePaul University, has specialized in global learning experiences, trained the COIL method and online learning since 2016. With over 12 partners across five continents, including the Navajo Nation, she has published numerous articles and is releasing a series of books on virtual exchanges. Her recent works include *Intercultural Competence through Virtual Exchange as a Tool in Achieving the SDGs* (2025) and *The Handbook of Virtual Exchange Across Disciplines* (forthcoming 2026). Currently, she lectures on environmental decision-making at Johns Hopkins University and is developing a book on public lands in the U.S. Southwest. Her subject matter field is in enviornemntal policymaking including US congressional, presidential and bureaucracy, and judicial decisions; and remediation of contaminated lands, toxic chemicals controversies to public health (US Superfund programs), and energy/environmental justice particularly on nuclear waste, weapons and energy generation.

Bill Rankin (Yale University)
Integrating Critical Mapping into Higher Education

In this webinar, we explore radical approaches to mapping through a guided book talk based on *Radical Cartography* (introduction and Chapter 1), with emphasis on urban issues and the politics of spatial representation. To connect these debates to environmental inquiry, the session also introduces two complementary lenses: algorithmic mapping in the environmental sciences and the question of cartographic temporality, or how maps stage time, change, and uncertainty. Together, these perspectives invite participants to think critically about how data-driven mapping tools and temporal frameworks shape knowledge, governance, and environmental action.

Bill Rankin is Associate Professor of History and Chair of the Program in the History of Science and Medicines at Yale University. Bill's research focuses on the intersection of science, technology, and geography, from the territorial scale of states and globalization down to the scale of individual buildings. He is particularly interested in the political effects of geographic knowledge – in mapping, the environmental sciences and technology, and methodological problems of digital scholarship, spatial history, and geographic analysis (including GIS). His first book, *After the Map: Cartography, Navigation, and the Transformation of Territory in the Twentieth Century* (University of Chicago Press, 2016), was a history of the mapping sciences in the twentieth century. It tracked the shift from the god's-eye view of the paper map to the embedded experience of GPS, and it analyzed the role of mapping both in the macropolitics of US global power and in the micropolitics of everyday subjectivity and the unexpected uses of new technologies. It won book prizes in the history of technology, social-science history, and international studies; more information is available on the book's website, www.afterthemap.info. His forthcoming book, *Radical Cartography: How Changing Our Maps Can Change Our World* (Viking, November 2025), is a historical, methodological, and practical exploration of data mapping. It argues for a new ethic of data visualization centered on the idea of visual argument. Instead of the "extractive visualization" of most contemporary mapping, which puts visualization in a subordinate position to "raw" data, it calls for a more interventionist and constructivist approach to spatial imagination grounded in the epistemic values of subjectivity, multiplicity, and uncertainty. The book brings the last two hundred years of mapping and visualization into conversation with Rankin's own mapping projects, which have been published and exhibited widely in the US, Europe, and Asia. Specific topics range from urban segregation and desert land use to the history of slavery and the geography of climate change; most of these maps are also available on his website, www.radicalcartography.net, maintained since 2003.

Miriam Mulders (University of Duisburg-Essen)
Employing Virtual and Extended Reality in Higher Education

Virtual and Extended Reality (VR/XR) technologies are increasingly discussed as promising tools for higher education, particularly in contexts where experiential and/or collaborative learning is required. However, their meaningful integration into teaching practice remains challenging, as educational value depends less on technological novelty than on pedagogical alignment, instructional design, and contextual constraints. This webinar addresses how VR/XR can be employed in higher education in a pedagogically grounded and sustainable way, with a specific focus on virtual exchanges. Building on research from instructional design and immersive learning, the session introduces XR as an umbrella term encompassing Virtual Reality and Augmented Reality and situates these technologies within a problem-oriented instructional design perspective. Rather than asking whether VR/XR leads to "better" learning, the webinar emphasizes how immersive technologies enable qualitatively different learning experiences by affording presence, embodied interaction, exploration, and emotional engagement. These affordances can be particularly relevant for sustainability-related topics that involve complex systems, ethical dilemmas, perspective-taking, and global interconnectedness.

The webinar will present concrete case examples from higher education, including VR-supported training scenarios, exploratory learning environments, and learner-generated AR content. At the same time, the session critically addresses practical, ethical, and organizational challenges, such as accessibility and equity, technical feasibility, data protection, cognitive load, and the risk of technology-driven rather than problem-driven implementation. The overarching goal of the webinar is to enable participants to critically assess when and why VR/XR use is educationally justified in their own teaching contexts. By the end of the session, participants will be able to (a) identify educational problems for which immersive technologies may offer added value, (b) distinguish different types of VR/XR learning scenarios, and (c) reflect on how VR/XR can be meaningfully integrated into higher education. The webinar combines short lectures with discussion and reflective activities, encouraging participants to connect the presented concepts and examples to their own disciplinary and institutional contexts.

Miriam Mulders is a postdoctoral researcher at the Chair of Educational Technology and Instructional Design within the Faculty of Educational Sciences at the University of Duisburg-Essen (Germany). Her research focuses on immersive learning with Virtual and Extended Reality in higher education, with particular attention to instructional design, learner experience (e.g., presence, flow, cognitive load), and ethical implications. She has led and contributed to multiple interdisciplinary projects on VR/XR in educational contexts.

Hanna Lappalainen (University of Helsinki)
Virtual Exchanges for Sustainable Education: The Cases of ERASMUS+ UNAVEX / CLUVEX Virtual Exchange Projects

The University of Helsinki is currently coordinating two large European Union ERASMUS+ virtual exchange projects: Climate University for Virtual Exchanges (CLUVEX) and UnaEuropa for Virtual Exchanges (UnaVEx), Both projects are being implemented during 2023–2024 and focus on the challenges of climate change and sustainable development. The overall goal is to engage a total of 5,000 university students in virtual exchange activities within three years. The projects support the continuation of studies in these subject areas through existing Massive Open Online Courses (MOOCs). CLUVEX builds on the Climate University MOOCs (climateuniversity.fi/), which are developed and coordinated by the University of Helsinki, while UnaVEx is based on the sustainable development MOOC of the Una Europa network (www.una-europa.eu/). This presentation will introduce these ongoing projects, share key lessons learned, and discuss how we have developed the virtual exchange concept as an integral part of distance learning.

Hanna K. Lappalainen is an adjunct professor in atmospheric sciences and Secretary General of the Pan-Eurasian Experiment (PEEX) Programme at the University of Helsinki's Institute for Atmospheric and Earth System Research (INAR), Finland. She also serves as Director of the Atmosphere and Climate Competence Center (ACCC) Impact Programme. She co-leads the *Arctic-Boreal Hub* of the University of the Arctic network together with Academician Markku Kulmala. In addition, she coordinates the ERASMUS+ UnaVEx and CLUVEX Virtual Exchange projects. She obtained her PhD from the University of Helsinki and has conducted research on atmospheric biogenic volatile organic compounds and plant phenology.