

# CLIMATE UNIVERSITY FOR VIRTUAL EXCHANGE (CLUVEX)

H.K. LAPPALAINEN<sup>1</sup>, A. MAHURA<sup>1</sup>, L. RIUTTANEN<sup>1</sup> AND THE CLUVEX TEAMS

<sup>1</sup>Institute for Atmospheric and Earth System (INAR), University of Helsinki, Faculty of Science/ Physics, Finland

Keywords: climate action, climate messengers, soft skills, on-line learning, MOOCs

## INTRODUCTION

Climate University for Virtual Exchanges (CLUVEX; <https://www.atm.helsinki.fi/cluvex>; 1 Jul 2023 – 30 Jun 2026) is a 3-year project conducted by two European Erasmus+ program countries: Finland (INAR University of Helsinki) as the coordinator and Denmark (University of Copenhagen). It also involves the Neighbourhood East countries such as Ukraine (with two Partners – Odessa State Environmental University and Taras Shevchenko National University of Kyiv) as well as Armenia (Yerevan State University). Additionally, an art and science non-profit association, the BioArt Society, based in Finland, collaborates in this initiative.

This project aims to connect students from European and Neighbourhood East universities and involve them in climate-related topics, including ideas for adapting to and mitigating the effects of climate change and advancing the green agenda. Moreover, the project emphasizes the development of interdisciplinary, green, and soft skills among the participants. In practice, the project is responsible for designing and organizing a series of interactive online workshops or trainings known as "virtual exchanges" (VE). These exchanges are structured to include educational materials and engage students, professors, teachers, and researchers collaboratively in small groups. During the project, a total of 5 VE Calls will be initiated, spanning both the Spring and Autumn semesters and starting from Autumn 2024. Each VE Call will extend invitations to 500 students from the CLUVEX Universities and other institutions in European and Neighbourhood East countries to participate in VE training weeks.

During a VE week, various activities will take place, including plenary sessions, discussions, and exercises focused on specific climate change topics within smaller groups. CLUVEX is rooted in atmospheric sciences research and builds from the "Climate University" (<https://climateuniversity.fi>). The goal is that, after participating in a VE, participants will gain a deeper understanding of climate-related issues and foster meaningful connections with their peers.

CLUVEX is implemented with a 50%x50% basis, meaning that half of the participants is from universities in Denmark and Finland, representing European universities, while the other half is from universities in Ukraine and Armenia, designated as Neighbourhood East countries. All partner institutions contribute their technical tools and pedagogical expertise to collaboratively design innovative VE interactions for students. The project also leverages its networks, such as Una Europa, an alliance of 11 European universities, and the World Meteorological Organization's Global Campus initiative in Europe and Neighbourhood East, to attract a diverse array of participants. The main motivation is to cultivate a new generation of young Climate Messengers who possess the skills and knowledge to foster climate awareness and sustainability strategies within their home organizations and future professional endeavours.

## METHODS

In 2023, the project partners will be focused on designing the VE concept and exercises. Simultaneously, they will be conducting a study to understand the challenges and opportunities associated with online

learning and communication. Teaching a class with virtual students presents unique challenges. During the first year, the project will concentrate on training VE moderators/ facilitators.

The CLUVEX team leaders and team members are already well-versed in various pedagogical approaches, services for society, and have a track record of publishing several peer-reviewed papers. It's worth noting that the content of the VE weeks will be delivered in English. The project places special emphasis on ensuring an adequate number of well-educated staff members with strong language skills who can effectively act as moderators.

Throughout the entirety of the CLUVEX process, feedback questionnaires will be employed. These questionnaires will be utilized for analyzing and improving the VE concept, from the education of moderators to piloting and implementing the VE weeks for students.

As an exciting innovation, the art and science partner, the BioArt Society (<https://bioartsociety.fi>), will bring artistic perspectives into the project. They will offer VE lectures and creative exercises that explore how contemporary art contributes to public discourse on climate change.

## CONCLUSIONS

CLUVEX is gaining momentum in the post-COVID-19 era and even the war time conditions in Ukraine, given the uncertainty surrounding when face-to-face communication will return to normal and the growing emphasis on sustainability in a world working toward carbon neutrality. In this context, the VE cooperation serves as a valuable complement to traditional physical mobility opportunities in the field of climate change research.

The project plays a vital role in addressing the complex web of political decisions and issues related to climate change, where the Neighbourhood East region holds also a significant position on a global scale. The emergence of new Climate Messengers, equipped with expertise in climate awareness and sustainability strategies, is highly relevant in today's labour markets. These individuals are well-positioned to contribute to the critical work of advancing climate-related initiatives in a world undergoing transformative changes.

## ACKNOWLEDGEMENTS

This work was supported by the European Union ERASMUS+, Project Number: 101111959.

## REFERENCES

- Lappalainen, H. K., Kerminen, V.-M., Petäjä, T., Kurten, T., Baklanov, et al. (2016): Pan-Eurasian Experiment (PEEX): towards a holistic understanding of the feedbacks and interactions in the land–atmosphere–ocean–society continuum in the northern Eurasian region, *Atmos. Chem. Phys.*, 16, 14421–14461, <https://doi.org/10.5194/acp-16-14421-2016>, 2016.
- Riuttanen, L., Ruuskanen, T., Äijälä, M., Lauri, A. (2021). Society needs experts with climate change competencies—what is the role of higher education in atmospheric and Earth system sciences? *Tellus B: Chemical and Physical Meteorology*, 73(1), 1-14
- Lauri, A., Ruuskanen, T., Riuttanen, L., Hari, P. Kulmala, M. (2020): Research-oriented intensive courses foster multidisciplinary atmospheric science. *World Meteorological Organization, Global Campus Innovations*, 2020.
- Mahura, A., V. Ovcharuk, T. Kryvomaz, H. Lappalainen, K. Lauri, et al. (2021): Online Approaches for Climate-Oriented Education. pp. 79-80, *In Proceedings of the International Research-To-Practice Conference “Climate Services: Science and Education”*, 144 p., ISBN 978-966-186-162-5
- Ruuskanen T., Vehkamäki, H., Riuttanen, L. Lauri A. (2018): An Exploratory Study of the Learning of Transferable Skills in a Research-Oriented Intensive Course in Atmospheric Sciences. *Sustainability*, 10(5), 1385, 2018. <https://doi.org/10.3390/su10051385>