

Revolutionizing STEM Education Through Virtual Biology Labs

Introducing VHEalthLab: Open-access virtual laboratories making quality STEM education accessible to all students across Europe

Dear Reader,

It is with great pleasure that we welcome you to the inaugural issue of the VHEalthLab newsletter. Our main goal is to improve Health Sciences education through open-access virtual laboratories (VLs) in Biology in four languages (English, Greek, Spanish and Romanian).

VHEalthLab is an Erasmus+ partnership initiative with a multidisciplinary consortium spanning academic institutions, technology developers, and policy makers. Our consortium comprises the University of Nicosia (Project Coordinator), Aristotle University of Thessaloniki, Universidad de Santiago de Compostela, Ascendia, and the Ministry of Education, Sport and Youth of the Republic of Cyprus.



The VLs, currently under development, are versatile and may be used in different teaching modes inside and outside the classroom, as well as a supplement to traditional laboratory teaching. In this newsletter, we share two of our VLs, with a total of 14 to come.

We invite you to follow our progress, engage with our events, and provide feedback to help refine the VLs. Feel free to test the VLs, share suggestions, or express interest in field-testing the Biology modules. Together, we aspire to translate cutting-edge digital tools into practical resources that enhance student learning and promote equitable access to high-quality education.

Kind regards,

Dr. Stella A. Nicolaou (Project Coordinator)

On behalf of the VHEalthLab Consortium



The Power of Virtual Laboratories

The COVID-19 pandemic exposed a critical gap in STEM education: how can students develop essential 21st-century skills like critical thinking, creativity, and collaboration when traditional laboratory work becomes impossible?

The VHEalthLab Solution:

High-quality, open-access virtual biology laboratories that supplement traditional lab work and make STEM education accessible to students regardless of location, resources, or circumstances.

Launched in December 2023 and funded by the European Union's Erasmus+ Cooperation Partnerships program, VHEalthLab represents a ground-breaking two-year initiative to transform how we approach laboratory-based learning in higher education.

Breaking Down Barriers

Virtual Labs democratize access to high-quality laboratory experiences, particularly benefiting students in remote areas, underfunded institutions, or those with learning difficulties. They provide the flexibility to learn at your own pace while developing the same critical skills as traditional labs.

Why Biology First?

Biology education is more relevant than ever as we face global challenges in health, sustainability, and climate change. By starting with biology, VHEalthLab addresses immediate curriculum needs while preparing students for emerging fields like biotechnology and health sciences.

Virtual Labs aren't just a pandemic response—they're the future of inclusive, accessible STEM education. They provide unprecedented advantages over traditional laboratory settings.

24/7

ACCESS

100%

SCALABLE

∞

REPEATABLE



Step Into the Lab

Light microscopy

This virtual lab immerses students in the core principles and techniques of microscopy. Learners examine microbial diversity in a pond water sample while developing key microscopy skills in a fully simulated, hands-on environment.

[Experience here](https://www.vhealthlab.eu/qqkw)

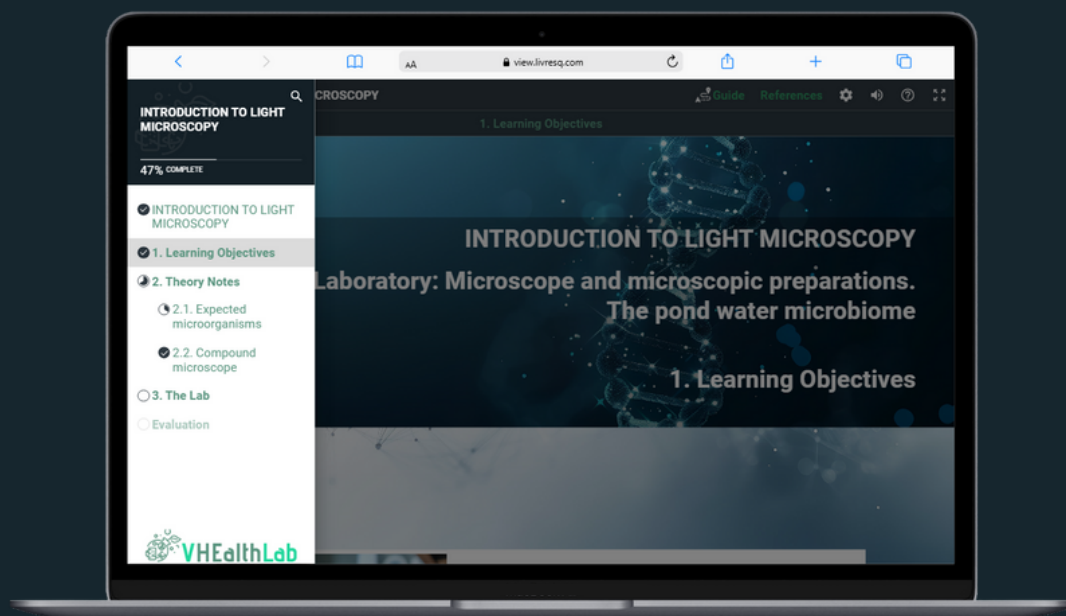
or visit <https://www.vhealthlab.eu/qqkw>

Lab safety

This interactive module introduces students to essential laboratory safety practices and scientific report writing. Through a simulated first lab session, learners explore chemical hazards, PPE, and safety equipment while receiving instant feedback to build safe lab habits and scientific communication skills.

[Experience here](https://www.vhealthlab.eu/s3kf)

or visit <https://www.vhealthlab.eu/s3kf>



A European Collaboration for Excellence

VHEalthLab brings together leading educational institutions and organizations across four countries, combining expertise in education, technology, and policy:

CY**University of Nicosia****Program Coordinator**

Led by Dr. Stella Nicolaou,
Associate Professor of Immunology

**UNIVERSITY
of NICOSIA****CY****Ministry of Education, Sports & Youth****Policy & Implementation**

Ensuring curriculum alignment and standards

**ES****University of Santiago de Compostela****Pedagogical Guidelines**

Educational frameworks and promotion

**GR****Aristotle University****Lab Design**

Creating innovative virtual laboratory experiences

**ARISTOTLE
UNIVERSITY OF
THESSALONIKI****RO****Ascendia SA****Platform Development**

Technical infrastructure and user experience



Learn more about our partners at

VHEalthlab.eu/partners



**Co-funded by
the European Union**

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them. Project number: 2023-1-CY01-KA220-HED-000166031

Meet the Team Behind VHEalthLab featuring University of Nicosia



Dr Stella Nicolaou

Associate Professor of Immunology at the University of Nicosia and Coordinator of the VHEalthLab project. She focuses on innovative STEM teaching methods like Problem-Based Learning and Virtual Laboratories to make biomedical education interactive and inclusive across Europe. She is passionate about using technology to enhance learning and support educators.

Dr Soulla Nicolaou

Associate Professor in Pharmacology and Associate Dean at the University of Nicosia Medical School. She researches medical education and cardiovascular pharmacology, focusing on student engagement through virtual and interactive learning. She designs educational experiences combining rigorous science with innovative teaching.



Dr Efi Nisiforou

Assistant Professor in Distance Education and New Technologies at the University of Nicosia. Her research integrates digital tools to enhance STEM learning and students' digital skills. She participates in European projects promoting accessible, technology-enhanced education and innovation in teaching.

Dr Mary Halebian

Adjunct Lecturer and PBL Tutor at the University of Nicosia Medical School. She contributes to virtual lab development and case writing for the VHEalthLab project, making biology education interactive and accessible, while supporting students in developing practical skills through digital platforms.



Meet the Team Behind VHEalthLab featuring Universidade de Santiago de Compostela (USC)



Dr Blanca Puig

Associate Professor in science education at the Faculty of Education, Universidade de Santiago de Compostela (USC), Spain. Her main research interest is the study of critical thinking and scientific practices in socio-scientific instruction in biology education. She is currently working in collaboration with secondary science education teachers and science educators from different EU countries in the design of learning environments for “One Health Education” and “Ocean Literacy” based on scientific practices. She has published international research articles, chapters, books, and resources for pre- and in- service teachers training in biology and health education in primary and secondary education.

Aurea Cadarso Rodríguez

Researcher in Science Education at the Faculty of Education of the Universidade de Santiago de Compostela (USC), Spain. Following her undergraduate studies in Biology, she completed a master's degree in Secondary Education Teaching, specialising in Experimental Sciences. Her master research dissertation was about Ocean Literacy at secondary education, a topic that she's currently exploring in the science education research group.



Project Milestones & Progress

From launch to implementation, here's how VHEalthLab is advancing virtual STEM education:

- FEB 2024** **Project Launch Meeting**
Inaugural meeting in Cyprus established project foundations, discussed lab design principles, and emphasized open access and accessibility for students with learning difficulties.
- AUG 2024** **Development Progress Review**
Second partnership meeting focused on virtual biology labs development, curriculum integration, and quality assurance processes.
- JAN 2025** **Platform Integration & Testing**
Latest meeting highlighted significant progress in case-writing, eLearning platform development, and preparation for OpenLabyrinth integration. Translation efforts underway for multilingual access.
- MAY 2025** **Content Finalization**
Upcoming: All multilingual content completion and final case study uploads across partner countries.
- JUL 2025** **Quality Evaluation**
Planned: Comprehensive evaluation of all cases in OpenLabyrinth environment to ensure quality and usability.
- DEC 2025** **Platform Launch**
Target: Full public release of VHEalthLab virtual biology laboratories to educators and students across Europe.



VHEalthLab

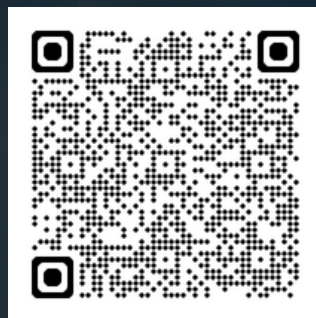
CONFERENCE

TRANSFORMING THE FUTURE OF BIOLOGY EDUCATION THROUGH VIRTUAL LABS

OCTOBER 30, 2025

ONLINE & UNIVERSITY OF NICOSIA, CY

View Agenda and Register Online:



vhealthlab.eu/conf-25

Coming in December 2025: Platform Launch Issue

- **Platform Showcase:**

Live virtual labs in action with real biology experiments you can conduct from anywhere

- **Impact & Results:**

Student learning outcomes, educator feedback, and success stories from across Europe

- **How to Get Started:**

Complete access guide, training resources, and support for educators

Stay Connected with VHEalthLab

Interested in piloting VHEalthLab? We'd love to hear from you.

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University of Nicosia

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