

# Science 4U

Local eco-systems of science engagement fostering  
Open Science Schooling for young people

HORIZON CSA 2016



The Horizon Open Schooling Call invites the creation of robust local eco-systems of science collaboration and engagement to foster and enable the active participation of young people in real-life and real-time science activities, exploration and learning.

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**Science 4U** will coordinate, support and establish such eco-systems of science collaboration and Open Science Schooling in 10 different European countries, all of them co-driven by young people and enabled by 3 different types of community agents: higher science educations, private organisations and local or regional NGO's.

The deep rationale of the Open Science Schooling approach and philosophy is to innovate science learning for young people and ensure that more young people will pursue various forms of science careers.

Therefore Open Science Schooling is based on engaging young people in science activities beyond traditional classroom instruction, known to create considerable and sometimes irreversible resistance and disinterest among many young people.

This has been overwhelmingly documented by science learning research for more than two decades.

“Students recognise that S&T are important for society, and they value the goods and the welfare coming along with the development. Nevertheless, they do not wish to have a job within these fields.

We interpret that young people, especially girls, do not want to have the *identity* that is seen to be connected with being a physicist or an engineer.

May it be that young people, especially girls, although they appreciate the technology, rather would like to have an identity that is conveying late modern values? Such values may be self-realization; creativity and innovation; working with people and helping others; and/or earning lots of money.”

Sjöberg and Schreiner: *Science education and youth's identity construction - two incompatible projects?* (2004)

“Students need authentic, practical experiences and realistic learning environments as essential parts of active learning.

Teachers need to have access to a varied new range of resources in order to build activities for students that are as true to life as possible, bringing the outside world into the school.”

Commission, *Entrepreneurship Education, 2011*

**Science 4U** will therefore develop and enable the establishment of such cross-sector eco-systems of science collaboration that can deliver the *scene*, the *framework* for and the *platform* for such beyond classroom instruction science engagement.

As clearly indicated in the Call, those eco-systems must be local, authentic and robust, and they must be openly available to any science engagement of young people in formal as well as non-formal contexts.

Commission policy is to invite all citizens into open science engagement, but as engaging and re-engaging young people in science is extremely important and urgent for 21<sup>st</sup> century Europe, the project focuses on the new generations.

No doubt, however, the engagement in science of young people is expected to have a strong carry over effect on other groups of citizens, such as for example the young people's families, friends and leisure organisations.

The overarching mission of the project's Open Science Schooling initiatives is the engagement and re-engagement of young people in science, science narratives and science exploration. This includes positioning young people as detectives, agents, explorers and innovators.

“Citizens should be actively and directly involved in science research and innovation projects.”

Commission 2015, *Science Education for Responsible Citizenship*

“Above all there is a need to involve citizens, young and old, as active agents at the heart of inquiry-oriented science learning - in identifying and framing the research problems and leading to the discovery of solutions and innovations which help situate science in every-day life. In this way, we involve a richer pool of talent in framing a more responsible and ethical approach to research and innovation.”

Commission 2015, *Science Education for Responsible Citizenship*

“Co-creation, user involvement, environmental and societal challenges increasingly drive innovation today.”

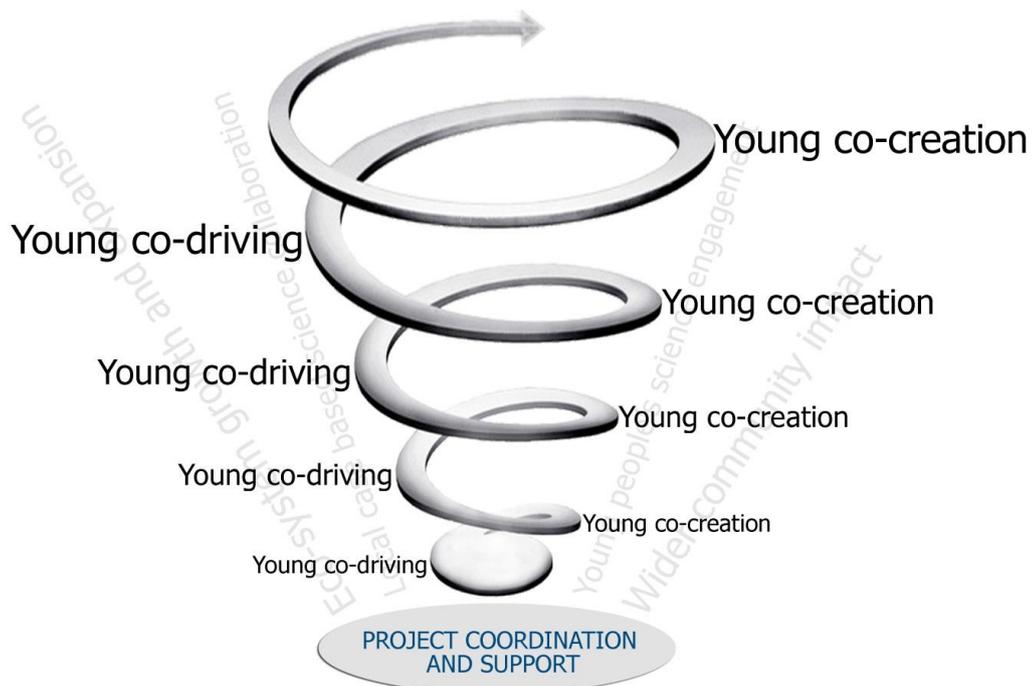
OECD, *New Nature of Innovation*

However, the project raises the question: “who are the young people”?

Commission policy is not only to engage young people in education in science, but *all young people*; and perhaps even with a special view to the young people at risk of being excluded from the educational system and from society.

Taking this very seriously, the project will ensure the availability of the local eco-systems for *all young people*.

## Science 4 U bottom-up dynamics



The project will do this through coordinating and supporting 3 different ways to drive and facilitate the local eco-systems (3 different *entrances*, so to speak), at the same time representing 3 different positions in the community, 3 different cultures and 3 different approaches to science, all of which are equally important.

This strategy makes sure that science engagement is not simply a matter of formal education, but a matter of “community” - and it is applied to ensure science engagement opportunities for all young people.

Offering all young people science engagement opportunities calls for different forms of eco-systems with the capacity to reach and engage very different groups of young people.

*This is the ultimate rationale behind the project’s 3-model concept and the construction of the consortium.*

The project methodology can therefore be defined as a consequence and function of the eco-systems methodology: the project actions are missioned to build up the local eco-systems through practical science engagement collaboration. The project will - as a coordination and support action - serve the needs of the local science collaboration.

The dynamics of the eco-systems are:

- practical science cases and missions leads to a growing eco-system
- a growing eco-system leads to more practical science cases and missions

Therefore the process can be described as a constantly upwards-widening spiral movement, ensuring that the permanent eco-systems build on practical collaboration and practical involvement of young people as well as on the active participating of community players and stakeholders.

An important dimension in **Science 4U** to fully understand is the difference between and interplay of the young people’s co-driving and co-creation.

The two different roles will come into play all along the expanding spiral of science collaboration and will be a basic principle in the project implementation as well as in the resulting Open Science Schooling models to share.

The two roles will integrate and be repeated along the young people’s engagement; they cannot be understood as a linear movement:

The young people’s co-driving concerns the establishment of the local eco-systems of science engagement (in interaction with the local framework organisation), whereas the young people’s co-creation concerns their engagement in local real-life and real-time science missions (in collaboration with community resources engaged in science).

The **Science 4U** project is a Coordination and Support Action, but this does not mean that no “concrete results” are produced. Among the many results, let us list the expectedly most powerful:

### The Guide to local Open Science Schooling

- engaging all young people in real-life and real-time science through local eco-systems of science collaboration

### Science 4U Lessons Learned

- support material to help local agents of Open Science Schooling to overcome a number of typical obstacles and roadblocks

### The Science 4U Video

- demonstrating through real-life cases the dynamics of the local eco-systems and co-created by the group of young role-models

### The Science 4U Policy Brief

- recommendations for policy and further research in the field of Open Science Schooling and innovation in science learning

### The Science 4U European community of young science engagement role-models

- post-project sustainability measure and resource

### The Science 4U European community of local framewokers of local eco-systems of science engagement and the co-driving of young people

- post-project sustainability measure and resource

# SCIENCE 4U Consortium

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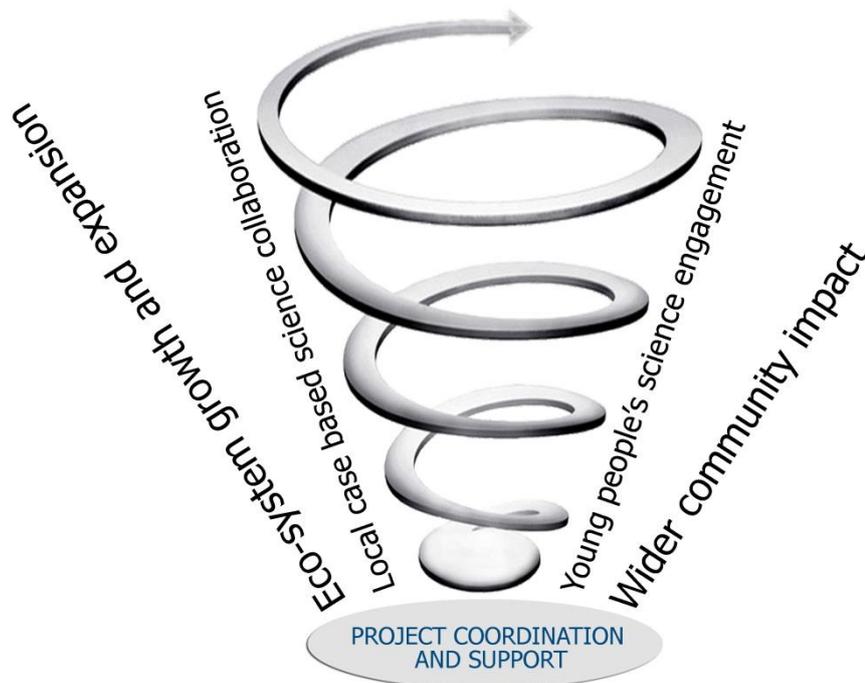


THE UNESCO LEARNING CITY OF MODI'IN, THE MULTI-DISCIPLINARY CENTER

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## Science 4 U bottom-up dynamics



## SCIENCE 4U DETAILS

Developed by:

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  - © Universitat Politècnica de Catalunya - Catalonia Spain
  - © Working with Europe - Catalonia Spain
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Coordinator: University Stefan cel Mare - Romania

Submission: August 2016

Duration: 3 years

Requested budget: 3.34 million euro

25 partners

12 EU countries + Israel

60% non-public partners

60% female professionals involved

## MORE INFORMATION



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