ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

SCIENCE EDUCATION

Research at the University of Bologna addresses: science teaching and learning in formal and informal contexts, scientific citizenship, public engagement, dissemination and communication of science, science teacher education.

Science teaching and learning

- Education to scientific knowledge
- Development of STEM skills; making STEM careers attractive
- RRI (Responsible Research and Innovation) and science teaching
- Pre-service and in-service teacher education
- New technologies for teaching and learning
- The role of history, philosophy and epistemology in teaching/learning science
- Educational reconstruction of advanced current topics in physics (thermodynamics, relativity, quantum physics)
- Physics education in a multi-disciplinary perspective
- Development of computational thinking in K-12 education
- Appropriation and conceptual change models
- Analysis of complex learning environments
- Instruction design about environmental issues
- Social development, cognition and gender stereotypes
- Social and cultural history of science

Citizen science and scientific citizenship

- Training needs in citizen science and impact assessment of citizen science initiatives
- Science education and scientific citizenship
- Future-oriented science education;
- Public engagement, community-based participatory research and involvement of citizens in S&T research
- Communication of science; skepticism and trust in science
- Dissemination, awareness, knowledge sharing activities and events to connect science and society
- Science and society in modern and contemporary age

Informal science education

- Science education in informal contexts
- Science education and storytelling
- Science teaching tools (museums, science centers, popular books, communication of science)
- Museums education
- Evaluation of museum programs

HIGLIGHTS

European Projects

Horizon 2020 **FEDORA** – *Future-oriented Science EDucation to enhance Responsibility and engagement in the society of Acceleration and uncertainty* aims at developing a future-oriented model enabling formal and informal science education to offer young people foresight and action competences. Recommendations for anticipatory policies will be formulated for the creation of visionary attitudes on open schooling.

Horizon 2020 **SEAS** – *Science education for action and engagement towards sustainability* aims at maximising the use of open-schooling networks to promote responsible citizenship via education on 21st century scientific literacy and skills. It will provide opportunities to cultivate a deep interest in science among students and citizens.