

International Science Teachers' Training Course

Programme
July 30th - August 4th, 2013
Volos, Greece



Organized by Ellinogermaniki Agogi

INTERNATIONAL SCIENCE TEACHERS' TRAINING COURSE

PROGRAMME

Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
30 July 2013	31 July 2013	1 August 2013	2 August 2013	3 August 2013	4 August 2013
<p>Arrivals</p>	<p>09:00 - 11:00 Introductory Session (Xenia A)</p> <p>Large e-Infrastructures and on-line labs Dr. Angelos Lazoudis <i>Ellinogermaniki Agogi</i></p>	<p>09:00 - 11:00 Workshop 2 (Xenia A)</p> <p>Crashing Galaxies in the classroom Eleftheria Tsourlidaki <i>Ellinogermaniki Agogi</i></p>	<p>09:45 - 17:00 Visit to Milies Traditional Village</p> <p>(Science Café Practices and Science Education)</p>	<p>09:00 - 11:00 Workshop 3 (Xenia A)</p> <p>Hunting the Higgs particle with HYPATIA data analysis tool Prof. Christine Kourkoumelis <i>National Kapodistrian University of Athens</i></p> <p>⊗</p> <p>Stelios Vourakis <i>National Kapodistrian University of Athens</i></p>	<p>10:00 - 12:00 Participants' Presentations, Reflection & Certificates (Xenia A)</p>
	<p>11:15 - 13:00 Interactive Session with all participants (Xenia A)</p> <p>The Calendar of Centaurus Chiron Dr. Serafeim Spanos <i>Society of Astronomy and Space</i></p>	<p>11:15 - 13:00</p> <p>Visit to the Archaeological Museum of Volos</p>		<p>11:15 - 13:00 Plenary Session (Xenia A)</p> <p>Go-Lab: Listening to Teachers' Voice and designing an on-line Lab Federation Dr. Denis Gillet <i>EPFL</i></p> <p>⊗</p> <p>Dr. Effie Law <i>University of Leicester</i></p>	<p>12:15 - 13:00 Plenary Session (Xenia A)</p> <p>Inspiring Science Education Dr. Sofoklis Sotiriou <i>Ellinogermaniki Agogi</i></p>
<p>17:00 - 19:00 Opening Session (Xenia A)</p> <p>Chair Dr. Angelos Lazoudis <i>Ellinogermaniki Agogi</i></p> <p>Science Created by You Prof. Ton de Jong <i>University of Twente</i></p> <p>Global Hands on Universe Dr. Rosa Doran <i>NUCLIO</i></p> <p>Discover the COSMOS: From Telescopes to Accelerators Dr. Sofoklis Sotiriou <i>Ellinogermaniki Agogi</i></p>	<p>14:00 - 15:15 Virtual visit @ CERN (Xenia A)</p> <p>Dr. Angelos Alexopoulos <i>CERN</i></p> <p>17:00 - 19:00 Workshop 1 (Xenia A)</p> <p>The Discover the COSMOS portal: educational material enriched with metadata Dr. Angelos Lazoudis <i>Ellinogermaniki Agogi</i></p>	<p>15:00 - 18:00 Plenary Session (Xenia A)</p> <p>Using the Faulkes Robotic Telescopes Dr. Rosa Doran <i>NUCLIO</i></p>	<p>18:00 - 19:00 Stereo photos exhibition</p>		
	<p>22:00 - 00:30 Observing the night sky from mountain Pelion</p>		<p>19:00 - 20:30 Plenary Session (Xenia B)</p> <p>Discover the COSMOS Conference Opening Prof. Christine Kourkoumelis <i>National Kapodistrian University of Athens</i></p> <p>Inquiry Learning with on-line labs Prof. Ton de Jong <i>University of Twente</i></p> <p>Designing Effective Outreach Programmes for Teachers Dr. Mick Storr <i>CERN</i></p>	<p>17:00 - 19:00 Workshop 4 (Xenia A)</p> <p>Finalization of Participants' educational scenarios Dr. Angelos Lazoudis <i>Ellinogermaniki Agogi</i></p>	<p>Departures</p>

Virtual visit @ CERN**(July 31st, 14:00 - 15:15, Hotel Xenia)**

The CMS (Compact Muon Selenoid) experiment, a part of the LHC (Large Hadron Collider) uses a general-purpose detector to investigate a wide range of physics, including the search for the Higgs boson, extra dimensions, and particles that could make up dark matter. Although it has the same scientific goals as the ATLAS experiment, it uses different technical solutions and design of its detector magnet system to achieve these. Summer school participants will have the opportunity through a live connection to receive a tour of the CMS underground facilities, talk with a CMS scientist and get answers to their questions.

Observing the night sky from mountain Pelion**(July 31st, 22:00 - 00:30, Chania)**

Come discover the wonders of the Universe with us in our field trip to Chania on top of mountain Pelion. By naked eye and with telescopes you will have the opportunity to join astronomers on this journey to rediscover some fascinating objects like Saturn and its beautiful rings, the Milkyway with its billions of stars, globular clusters, planetary nebula and much more. The trip is organized by the Society of Astronomy and Space that will also provide participants with a number of telescopes allowing observation time per visitor as much as possible. Departure is expected shortly after 21:30 from Hotel Xenia, Volos.

**Visit to the Archaeological Museum of Volos****(August 1st, 11:15 - 13:00, Volos)**

The Archaeological Museum of Volos, houses many exquisite finds from early 20th century and modern archaeological excavations in Thessaly. Exhibits on display include jewelry, household utensils and agricultural tools, originating from the Neolithic settlements of Dimini and Sesklo, as well as clay statuettes and a wide variety of items from the Geometric period, a time of great heroic events, such as the Argonaut Expedition and the Trojan War. Other fascinating exhibits include tombs transported in their entirety from the archaeological sites where they were discovered, along with the human skeleton and the offerings placed around it. Just outside the museum there are some interesting reconstructions of the Neolithic houses at Dimini and Sesklo.

Science Café Practices and Science Education**(August 2nd, 14:00 - 15:00, Milies traditional village)**

Science cafés are informal events of various formats, which all share a common feature: they are relaxed social gatherings focused on promoting the public understanding of science. In the framework of the SciCafé 2013 Events, organized by SciCafé - Europe's Network of Science Cafés (<http://www.scicafe.eu>), summer school participants can explore the science café concept and share relevant views and experiences with researchers and practitioners from diverse fields and contexts. Participants will have the chance to participate in lively discussions on the opportunities and challenges linked to science café practices in science education, on the one hand, and science communication in science museums and centres, on the other.

**Stereo photos exhibition****(August 2nd, 18:00 - 19:00)**

Mr. Zafrantzias Efsthathios, an amateur astronomer, member of the Society of Astronomy and Space, Volos-Greece, will guide us through his private collections of

- stereo photos- slides of the starry Sky that were taken by him
- rare stereo diagrams created by Mr Ph. Fauth (Germany) in 1916, that were used as educational tools for teaching astronomy in the early 1900's

The stereo photos and the stereo diagrams can be seen in stereo at the exhibition with the appropriate optical devices that will be given to visitors.

JOIN THE OPEN EDUCATIONAL RESOURCES COMMUNITY

Discover the COSMOS

Engaging the science classroom using e-infrastructures



The Discover the COSMOS (<http://www.discoverthecosmos.eu/>) coordination action aims to demonstrate innovative ways to involve teachers and students in e-Science through the use of existing e-infrastructures in order to spark young people's interest in science and in following scientific careers. Its learning environment, offered in a form of a portal (<http://portal.discoverthecosmos.eu>), is an experimental laboratory for students and teachers, aiming to improve science instruction by expanding the resources for teaching and learning in schools, providing more challenging and authentic learning experiences. The portal brings together resources, virtual experiments and online labs from the fields of Astronomy and High Energy Physics (HEP). It offers access to a network of robotic telescopes and to the major CERN experiments, ATLAS and CMS.

Go-Lab

Global Online Science Labs for Inquiry Learning at School

The Go-Lab project (<http://www.go-lab-project.eu/>) will offer a wide federation of existing virtual and remote online laboratories and databases with the aim to make them available and easily accessible for teachers and students throughout Europe. The service provided will aim to assist in modernizing current science teaching practices and provide more challenging, authentic and higher-order learning experiences for students. The Go-Lab tools will offer the opportunity to teachers to design online interactive experimentations for their students to engage in by accessing and controlling real instruments or using simulated solutions of their choice within pedagogically structured and scaffolded learning spaces that are extended with social communication facilities. Teachers and students will also be able to participate in a pan-European educational community aiming to promote scientific culture in society, and help young people to acquire a better understanding of the role of science in society. The project will implement large scale pilots in 15 countries across Europe in order to introduce the use of on-line labs and their integration in science teaching activities while engaging student in to extended joyful episodes of learning.



Open Discovery Space

A socially-powered and multilingual open learning infrastructure to boost the adoption of eLearning resources



Open Discovery Space (<http://www.opendiscovery.space.eu>) aims to serve as an accelerator of the sharing, adoption, usage, and re-purposing of the already rich existing educational content base. It will demonstrate ways to involve school communities in innovative teaching and learning practices through the effective use of eLearning resources. Moreover, it will promote community building between numerous schools of Europe and empower them to use, share and exploit unique resources from a wealth of educational repositories, within meaningful educational activities. In

addition, it will demonstrate the potential of eLearning resources to meet the educational needs of these communities, supported by European Web portal: a community-oriented social platform where teachers, pupils and parents will be able to discover, acquire, discuss and adapt eLearning resources on their topics of interest. Finally, it will assess the impact and document the whole process into a roadmap that will include guidelines for the design and implementation of effective resource-based educational activities that could act as a reference to be adopted by stakeholders in school education.

Pathway

The Pathway to Inquiry Based Science Teaching

The "PATHWAY" project (<http://www.pathway-project.eu/>) aspires to set the pathway towards a more widely uptake of inquiry-based science education, following the recommendations of the EU Rocard report "Science Education Now: A renewed Pedagogy for the Future of Europe". Towards this end it provides teachers with: a standard-based approach to teaching science by inquiry that outlines instructional models that can help them organise their instruction effectively; a number of best practices in inquiry-based science education, which they can use and adapt to their needs; a large number of training activities that can support them in implementing the inquiry instructional models and best practices in their science classrooms; and a community of practitioners of inquiry, who can help them sustain and further develop the new practices.



The summer school is organized in the framework of the COMENIUS-GRUNDTVIG In-Service Training Programme and is supported by the Discover the COSMOS and Go-Lab projects which are financed by the European Commission within the Seventh Framework Programme.