International Conference "Science Education in School" – 5th edition
Abstracts of conference presentations and speakers' profile

ZVI PALTIEL

CV

- Ph.D. at the Weizmann Institute (ISRAEL, 1977), Department of Nuclear Physics.
- 1977-79 Post Doc at MIT, Cambridge Massachussets
- 1979-99: Physicist. R&D several hi-tech industries. R&D in MRI and its medica applications, NMR oil well logging, radioactive medical imaging.
- 2000-2014: Informal science education at the Weizmann Institute, The Clore Garden of Science and Israel Scitesch Network.

President of the Network of Youth Excellence (NYEX)
Member of the International Committee of the Asian Science Camp (ASC)

Abstract of presentation: On Matchmaking, Stability of Marriage and ...College Admission

Math even, or perhaps primarily, for those who hate math, using neither numbers nor equations.
We will show how simple mathematical considerations can help people, for example, a matchmaker. This example will be followed by practical conclusions one may implement on other occasions such as: acquiring a boy/girlfriend, auction, college admission and more.

Abstract of presentation: Safe-Cracking Physics Tournament

The »S. Freier Physics tournament« discussed is conducted annualy for 20 years. Student teams design safe locking mechanism using high-school physics. On the tournament day all safes are arranged each in a separate room, allowing teams to spend 10 minutes in an attempt to crack each of their peers safes. The tournament engages students in an intensive physics study for months all the way from concieving the locking mechanism concept, through the detailed design of the »safe«, all the way to the actutual implementation. Team work and the appreciation of the of other teams accomplishments add yet another important educational aspect.

EILISH MCLOUGHLIN

CV

Dr. Eilish McLoughlin holds a PhD in Experimental Physics and is Director of the Centre for the Advancement of Science and Mathematics Teaching and Learning (CASTeL) at Dublin City University whose mission is to undertake research to inform and enhance the teaching, learning and assessment of science and mathematics at and across all educational levels (i.e. primary through to postgraduate). Her research interests focus on the teaching and learning of science as a process of inquiry, the effective use of educational technologies and the integration of these in the classroom practice. She coordinates the FP7 funded ESTABLISH project (2010-2014) in Inquiry Based Science Education (IBSE) and is a member of the coordinating team on the FP7 funded SAILS project (2012-2015) and partners on several other number European projects in science teacher education.

Abstract of presentation: Experiences from two European IBSE teacher education projects – ESTABLISH and SAILS

Inquiry-Based Science Education (IBSE) has been the focus of many national and international initiatives in recent years and the pan-European projects ESTABLISH (2010-2014) and SAILS (2012-2015) have been funded under the EU Seventh Framework programme to support teachers in the use and dissemination of Inquiry based approached. The ESTABLISH project collaboration has led to the development of IBSE teaching and learning materials that form the core aspect of ESTABLISH IBSE teacher education programmes for both in-service and pre-service teachers. These materials and programmes have been trialled and implemented across 11 European countries and support teachers in using IBSE methods in the classroom. In addition, the key objective of the SAILS project is to support teachers in developing assessment strategies and techniques that help them to assess those important inquiry skills that are so difficult to capture under traditional exam conditions. The outcomes and experiences gained from coordinating these two pan-European projects will be presented and the impact of these projects in classrooms across Europe will be discussed.

CHRISTIAN BERTSCH

CV

Dr. Christian Bertsch is Professor for Science Education at the University of Education in Vienna, Austria. He taught science at primary and secondary level and is now focusing his research on the impact of Continuous Professional Development Courses on the way science is taught at primary level.

Abstract of presentation: Charles Darwin, Isaac Newton, John Hattie – what do they have in common? How the nature of science influences good science teaching.

“Science has been taught too much as an accumulation of ready-made facts, not enough as a method of thinking”. This quote from John Dewey is more than 100 years old. Nevertheless it describes very well, how science is mainly taught in European classrooms today. Rethinking science education towards more inquiry based methods will not only raise students’ interest in science but also foster understanding that goes beyond replication of what the teacher said or what is written in the textbook.