INTRODUCTION TO ACTIVE LEARNING IN OPTICS AND PHOTONICS (ALOP): A VIRTUAL WORKSHOP

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ABSTRACT

In difficult times, education programs need to adapt for an uncertain future. Active Learning in Optics and Photonics (ALOP) is a teacher training program designed to strengthen the introductory physics learning environment at the secondary and university levels, especially in developing countries. It was developed by UNESCO and is currently sponsored by SPIE and ICTP. A full 5-day, in-person, intensive, hands-on-minds-on ALOP workshop updates participants on introductory optics and photonics and introduces them to active learning strategies that have been demonstrated to be more effective than traditional instruction. In-person ALOPs have not been possible recently because of the pandemic.

This short version has been developed as a virtual introduction to ALOP. Participants will actively experience sample activities from each of the five ALOP modules, including predictions and small and whole group discussions using breakout rooms. They will also receive an electronic version of the entire ALOP Teacher Training Manual andinformation on scheduling an in-person workshop in the future. More information on ALOP can be found at:
https://pages.uoregon.edu/sokoloff/ALOPwebpage.html

Intended Audience: University and Secondary-school Educators

PRESENTERS

Prof. David Sokoloff is Professor of Physics, Emeritus at the University of Oregon. He earned his Ph.D. in AMO Physics at MIT. For over three decades, he has studied students' conceptual understandings, developed active learning approaches (including RealTime Physics and Interactive Lecture Demonstrations, both published by Wiley) and conducted numerous faculty development workshops all over the world. The American Association of Physics Teachers awarded him the 2007 Robert A. Millikan Medal, and will honor him at their January National meeting with the 2020 Oersted Medal for "his outstanding, widespread, and lasting impact on the teaching of physics." He was also awarded the American Physical Society (APS) 2010 Excellence in Physics Education Award (with Priscilla Laws and Ronald Thornton). He has presented workshops in over 30 developing countries as part of the UNESCO Active Learning in Optics and Photonics (ALOP) team, winner of the 2011 SPIE Educator Award.

Prof. Alex Mazzolini is an Adjunct Professor at Swinburne University of Technology, in Melbourne Australia. During his academic career, he initially worked in the area of nuclear physics and later in photonics. During the past two decades, he has focused his attention towards the important area of STEM education research. He was the inaugural Associate Dean for Learning and Teaching in Swinburne's Faculty of Science and Engineering, and the founder of its Engineering and Science Education Research (ESER) group. He has authored or co-authored around 40 journal articles and book chapters, and 60 conference proceedings articles. He has organized and facilitated many Active Learning workshops in physics and engineering both in Australia and in many developing countries throughout the world. Alex is a past Chair of the Asian Physics Education Network (ASPEN) and a founding member of the UNESCO Active Learning in Optics and Photonics (ALOP) program. His contributions in the area of Physics and Engineering education have been acknowledged via several national and international awards.