



Optics Education and Outreach in Southern California

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Abstract:

For well over a decade, the Laser Electro-Optics Technology (LET) program has been teaching introductory laser and optics classes at Irvine Valley College (IVC). At the beginning of the telecom boom, the Irvine CACT was established to teach optics fabrication to support the many optics fabrication businesses in Southern California. In the past few years, these two programs have merged – with some help from the Optics Institute of Southern California (OISC) - and grown under the newly established Advanced Technology and Education Park (ATEP). IVC and ATEP are both operated by the South Orange County Community College District (SOCCCD). Last year a new program of three courses was established to teach, in sequence, lens, optical systems and optomechanical systems design. The first part of this presentation reviews the reasons for establishing these courses and their content, the students' motivations for taking them and their employers' incentives for encouraging the students.



The second part of this presentation reviews how in the modern era, art and technology have been at opposite ends of the spectrum of human study. Artists tend to be non-technical and technologists tend not to be artistic. While this is a broad generalization, it is rare to find an artist teaching science or an engineer teaching art. However, if we think back several centuries, it was very common for great artists to be at the forefront of technology. The prime example being the great Leonardo Di Vinci. Over the past several years, the optics educational outreach programs of the Optics Institute of Southern California (OISC) have incorporated using art and artists to help teach optics and related science. The original use of this was with material from the General Atomics Education Foundation, Color My World, which has been used in a number of settings. Recently, the OISC has partnered with the UC Irvine Beall Center for Art + Technology to provide Family Day Event presentations that use the themes of current Art + Technology exhibits to help attendees learn and understand more about the fundamental science through the art. The two main concepts here are that artists are using science and technology as the basis for their art, also sometimes making some social statements; and the technologists are using the art to make the science more accessible and interesting to the general public. This paper weaves a path from the original OISC uses of art to the recent work at UC Irvine.



About the Speakers:

Valentina Doushkina and Donn Silberman have each been in the optics field for well over twenty years and have worked together at Corning from in 2000 and 2001 and again at MetroLaser in 2005 and 2006. They are both current elected members of the OSSC Board of Directors and their OSSC biographies can be read on the OSSC website.

http://oisc.net/donn_m.htm

http://www.osscc.org/bios/donn_silberman-bio.htm

http://www.osscc.org/bios/valentina_doushkina-bio.htm

To get more details about the information presented in these talks visit the link to this announcement on the OISC.net website and click on the links.

<http://oisc.net> <http://oisc.net/OSSCJune2008Slides.pdf>

[Teaching lens, optical systems and optomechanical systems design at the Irvine Center for Applied Competitive Technologies](http://oisc.net/SPIE6668-15Aug2007.pdf) <http://oisc.net/SPIE6668-15Aug2007.pdf>

[Art + technology in optics educational outreach programs](http://oisc.net/SPIE6668-17Aug2007.pdf)
<http://oisc.net/SPIE6668-17Aug2007.pdf>