

PHOTONICS SEMINAR

Dr. Demetrios Christodoulides

Exploring the World Between Classical and Quantum Optics

Faculty Host: Dr. Siddharth Ramachandran

November 21, 2013

2:00-3:00 p.m.

Room 901

Photonics Center

8 Saint Mary's Street

*Refreshments will
be served!*

Analogies between different disciplines provide a powerful tool in understanding nature. As such, quantum-classical optical similarities offer new opportunities in manipulating classical optical fields or quantum states. In recent years, many of the ramifications of these concepts have come to fruition on several fronts in the general area of optics. In this talk, Dr. Christodoulides will provide an overview of his activities in this field. As an example, he will consider accelerating optical wavepackets in the form of airy beams as a means to bend light for applications in plasmonics, extreme nonlinear optics, and biology. Studying quantum inspired phenomena in artificial optical structures that would have been otherwise impossible to directly observe in their own domain, like super-symmetry and parity-time symmetry will be discussed. Finally, the possibility of quantum state engineering in periodic and random optical lattices will be reviewed.

Dr. Christodoulides is a Provost's Distinguished Research Professor at CREOL-the College of Optics and Photonics of the University of Central Florida. He received his Ph.D. degree from Johns Hopkins University in 1986 and he subsequently joined Bellcore as a post-doctoral fellow at Murray Hill. Between 1988 and 2002 he was with the faculty of the Department of Electrical Engineering at Lehigh University. His research interests include linear and nonlinear optical beam interactions, synthetic optical materials, optical solitons, and quantum electronics. He has authored and co-authored more than 250 papers. He is a Fellow of the Optical Society of America and the American Physical Society. In 2011, he received the R.W. Wood Prize of OSA.

