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5. Ophthalmic Imaging: Structure and Function
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7. Ophthalmic Imaging: Adaptive Optics
   Daniel X. Hammer, U.S. Food and Drug Administration (United States)
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8. Ophthalmic Imaging: Technology
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9. Ocular Biometry, Vision Correction and Vision Assessment
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Pascal Rol Award

Arthur Ho, Brien Holden Vision Institute (Australia)
Karen M. Joos M.D., Vanderbilt University (United States)
Daniel V. Palanker, Stanford University (United States)
Introduction

The papers contained in this volume were presented at the twenty-seventh conference on Ophthalmic Technologies, held from January 28 to 29, 2017, at the Moscone Center in San Francisco, California as a part of the SPIE Photonics West BiOS Meeting.

A total of 56 papers and 16 posters were presented by scientists, clinicians, and engineers from academia and industry representing 20 countries spanning 4 continents. Topics included new approaches using vortex beams for laser corneal surgery, characterization of corneal and lens biomechanics using optical coherence elastography, high resolution cellular-level imaging of the cornea and retina using optical coherence tomography and adaptive optics, and retinal and choroidal vasculature imaging.

The conference hosted its eleventh presentation on the topic of the unmet needs and impact of technology in a clinical area. Prof. William Culbertson, from Bascom Palmer Eye Institute at the University of Miami, gave a captivating lecture describing the development and future needs of femtosecond laser cataract surgery.

The seventeenth Pascal Rol Award was presented to Dr. Furu Zhang and his colleagues from Indiana University for their outstanding paper on “Tracking dynamics of photoreceptor disc shedding with adaptive optics-optical coherence tomography” (10045-40). Established in memory of Dr. Pascal O. Rol, former chair and co-founder of the Ophthalmic Technologies conference, the award is in recognition of the best manuscript and presentation. The 2017 finalists of the award, selected by the entire program committee among the 74 abstract submissions, included Iwona M. Gorczynska (10045-33), Francesco LaRocca (10045-45), and Zhuolin Liu (10045-38).

We are very grateful to the Brien Holden Vision Institute in Sydney, Australia, for sponsoring the 2017 Pascal Rol award and keynote lecture through the Pascal Rol Foundation.

We thank the Program Committee members, session chairs, speakers and participants, as well as the SPIE staff for their support and dedication in making this conference a success.

We extend an invitation for the Ophthalmic Technologies XXVIII conference, which is scheduled for Saturday January 27 and Sunday January 28, 2018 in San Francisco, CA.

Fabrice Manns
Per G. Söderberg
Arthur Ho
Seventeenth Pascal Rol Award for Excellence in Ophthalmic Technologies
Supported by the Brien Holden Vision Institute through the Pascal Rol Foundation

Presented on Sunday January 29, 2017 to

Dr. Furu Zhang

for his excellent paper on

"Tracking dynamics of photoreceptor disc shedding with adaptive optics-optical coherence tomography"

Arthur Ho (left) and Karen Joos (right) present the 2017 Pascal Rol Award to Furu Zhang (center).

Past awardees

2016 Zhuolin Liu  Imaging human retinal pigment epithelium cells using adaptive optics optical coherence tomography
2015 Francesco de la Rocca  Ultra-compact switchable SLO/OCT handheld probe design
2014 Marco Ruggieri  Biometry of the ciliary muscle during dynamic accommodation assessed with OCT
2013 Yossi Mandel  In-vivo performance of photovoltaic subretinal prosthesis
2012 Clemens Alt  In vivo quantification of microglia dynamics with an SLO in a mouse model of focal laser injury
2011 James Loudin  Photovoltaic Retinal Prosthesis
2010 Daniel Hammer  Multimodal adaptive optics for depth enhanced high-resolution ophthalmic imaging
2009 Kazuhiro Kurokawa  1 μm wavelength adaptive optics scanning laser ophthalmoscope
2008 Boris Povazay  Minimum distance mapping using volumetric OCT: A novel indicator for early glaucoma diagnosis
2007 Yoshiaki Yasuno  Clinical examinations of anterior eye segments by three-dimensional swept-source optical coherence tomography
2006 Enrique Fernandez  Adaptive optics using a liquid crystal spatial light modulator for ultrahigh-resolution optical coherence tomography
2005 Karsten König  Cornea surgery with nanosecond femtosecond laser pulses
2004 Daniel Palanker  Attracting retinal cells to electrodes for high-resolution stimulation
2003 Igor Ermakov  Non-invasive optical techniques for the measurement of macular pigments
2002 Georg Schuele  Non-invasive temperature measurements during laser irradiation of the retina with optoacoustic techniques
2001 Matthew Smith  Minimizing the influence of fundus pigmentation on retinal vessel oximetry measurements
Clinical implementation of fs cataract surgery, needs for further technology?

The Pascal Rol Lecture on Ophthalmic Technologies is presented by a leading researcher in ophthalmology with a strong interest and pioneering research contributions to the field of ophthalmic technologies. This invited lecture is intended to trigger further development of ophthalmic technologies by stimulating discussions between basic scientists, engineers, and clinicians.

The 2017 lecture was supported by the Brien Holden Vision Institute through the Pascal Rol Foundation (www.pascalrolfoundation.org)