Agenda

Course Organizers:

Krzysztof Palczewski, PhD
Irving H. Leopold Chair and Professor of Ophthalmology
Director, Center for Translational Vision Research
UCI School of Medicine

Baruch D. Kuppermann, MD, PhD
Roger F. Steinert Professor
Chair, Department of Ophthalmology
Director, Gavin Herbert Eye Institute
UCI School of Medicine

Maciej Wojtkowski, PhD
Chair, International Center for Translational Eye Research
Department of Physical Chemistry of Biological Systems
Institute of Physical Chemistry, Polish Academy of Sciences
February 6 – Day One (2:15 pm)

2:30-3:10 pm  Fluorescence imaging, hyperspectral, fluorescence lifetime, FLIM, phasor

Enrico Gratton, PhD
Distinguished Professor
Biomedical Engineering
Distinguished Professor (Joint Appointment) Physics and Astronomy
Distinguished Professor (Joint Appointment) Surgery
Professor, Biomedical Engineering, Physics and Astronomy, Surgery
The Henry Samueli School of Engineering
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3:10-3:50 pm  Adding dimensions to intravital imaging

Scott E. Fraser, PhD
Provost Professor of Biology and Bioengineering
Elizabeth Garrett Professor of Convergent Biosciences
Director of Science Initiatives
Co-Director Bridge Institute
University of Southern California
Translational Imaging Center
Michelson Center for Convergent Bioscience
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3:50-4:05 pm  Break

4:05-5:35 pm  Keynote Lecture: Holographic optical coherence tomography and functional imaging of the human retina

Dierck Hillmann, PhD
Thorlabs, GmbH
dhillmann@thorlabs.com

4:55-5:35 pm  Imaging blood flow in the eye with laser Doppler holography

Leo Puyo, PhD
Researcher
Langevin Institute, France
Paris Adaptive Optics for Retinal Imaging and Surgery Group
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parigroup.webstarts.com/students_and_post-doctorate_students.html
5:35-6:15 pm  AI and deep learning in biomedical imaging

Pierre Baldi, PhD
Distinguished Professor, Department of Computer Science
Director, Institute for Genomics and Bioinformatics
Associate Director, Center for Machine Learning and Intelligent Systems
Institute for Genomics and Bioinformatics
School of Information and Computer Sciences
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February 7 – Day Two  (8:30 am)

8:30-9:10 am  Ultrahigh-speed, high-fidelity full field ophthalmic OCT Imaging

Maciej Wojtkowski, PhD
Chair of International Center for Translational Eye Research
Institute of Physical Chemistry
Polish Academy of Sciences
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pob-lab.com

9:10-9:50 am  Image-guided robotic microsurgery

Joseph A. Izatt, PhD
Michael J. Fitzpatrick Professor of Engineering
Fellow of AIMBE, SPIE, OSA, and NAI
Department of Engineering in the Edmund T. Pratt, Jr. School of Engineering
Duke University
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9:50-10:30 am  OCT angiography

David Huang, MD, PhD
Martha and Eddie Peterson Professor of Ophthalmology
Professor of Biomedical Engineering
Casey Eye Institute
Oregon Health & Science University
huangd@ohsu.edu
ohsu.edu/people/david-huang/F7797A92D08A45A809E28D3DEB8565

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Oregon Health & Science University
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ohsu.edu/people/david-huang/F7797A92D08A45A809E28D3DEB8565
10:30-10:45 am Break

Moderator
Maciej Wojtkowski, PhD

10:45-11:25 am Retinal imaging with sensorless adaptive optics OCT and two-photon excited fluorescence

Marinko V. Sarunic, PhD
Professor, School of Engineering Science
Simon Fraser University
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sfu.ca/engineering/faculty-and-staff/faculty/marinko_sarunic.html

11:25 am-12:05 pm Progress in structural and functional all-optical in vivo retinal imaging

Robert J. Zawadzki, PhD
Associate Professor
Vision Science and Advance Retinal Imaging (VSRI) Laboratory
UC Davis Eye Center
Managing Director
UC Davis EyePod: Small Animal Ocular Imaging Laboratory
Department of Cell Biology and Human Anatomy
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12:05-1:10 pm Lunch

Moderator
Scott E. Fraser, PhD

1:10-1:50 pm Nonlinear optical microscopy, label-free imaging

Eric Potma, PhD
Professor, Department of Chemistry
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1:50-2:30 pm Two-photon fluorescence imaging in living animals

Grazyna Palczewska, PhD
Director of Medical Device Development
Polgenix, Inc.
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polgenixinc.com

2:30-3:10 pm Advantages and disadvantages of ultrashort pulses for multimodal nonlinear optical imaging

Marcos Dantus, PhD
MSU Foundation Professor, Department of Chemistry
University Distinguished Professor
Michigan State University
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3:10-3:25 pm Break

Moderator
Grazyna Palczewska, PhD

3:25-4:05 pm High resolution autofluorescence imaging of the living human retina in health and disease

Ethan A. Rossi, PhD
Assistant Professor of Ophthalmology, School of Medicine
Assistant Professor, Department of Bioengineering, Swanson School of Engineering
University of Pittsburgh
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ophthalmology.pitt.edu/people/ethan-rossi-phd

4:05-4:45 pm Assessing retinal structure in albinism

Joseph Carroll, PhD
Professor of Ophthalmology & Visual Sciences, Biophysics, and Cell Biology, Neurobiology and Anatomy
Director Advanced Ocular Imaging Program
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mcw.edu/departments/ophthalmology-eye-institute/faculty/joseph-carroll-phd

4:45-4:55 pm Break