



optics in
cardiology

PROGRAM

April 20-21
2018

Zurich
Switzerland

UniversityHospital Zurich
Gloriastrasse 29
Grosser Hörsaal OST B Hoer 10

www.heart-team.org



UniversityHospital
Zurich

Course directors
Evelyn Regar
Gijs van Soest



UniversityHospital
Zurich



CONGRESS VENUE

UniversityHospital Zurich
Klinik für Herz- und Gefässchirurgie
Gloriastrasse 29
8091 Zurich, Switzerland

Main Auditorium

Grosser Hörsaal OST B Hoer 10

Workshops

Kleiner Hörsaal OST B Hoer 5

CONGRESS SECRETARIAT

HSEC Swiss GmbH
Marie-Hélène Durschei
Sihleggstrasse 23
8832 Wollerau, Switzerland
Phone: +41 79 625 80 10
Fax: +41 44 782 80 89
marie-helene.durschei@ee-hsec.org

REGISTRATION DESK/ CONGRESS OFFICE

Friday, April 20, 2018
08:00 - 18:00

Saturday, April 21, 2018
08:00 - 17:30

On-site registration is possible
during office hours.

CONGRESS DIRECTORS

Evelyn Regar MD PhD
UniversityHospital Zurich
Gijs van Soest PhD
Thorax Center Erasmus MC

CONGRESS WEBSITE

www.heart-team.org/2018-Optics

SCIENTIFIC SECRETARIAT

University Hospital Zurich
Rämistrasse 100
8091 Zurich, Switzerland

ACCREDITATIONS

**CSH - Cardiologica
Societas Helvetias**
The event is accredited
with 14h 1A credits.



**SGAR - Schweizerische Gesellschaft
für Anästhesiologie und Reanimation**
The event is accredited with 15 credits.



COURSE DIRECTORS

Evelyn Regar, Switzerland

Gijs van Soest, The Netherlands

SCIENTIFIC ADVISORY BOARD

Carlo Di Mario, Italy

Francesco Maisano, Switzerland

Lorenz Räber, Switzerland

Frank Ruschitzka, Switzerland

Gary Tearney, USA

Antonius van der Steen, The Netherlands

INTERNATIONAL FACULTY

Tom Adriaenssens, Belgium

Takashi Akasaka, Japan

Ziad Ali, USA

John Ambrose, USA

Brett Bouma, USA

Davide Capodanno, Italy

Antonio Colombo, Italy

Joost Daemen, The Netherlands

David Erlinge, Sweden

Javier Escaned, Spain

Giulio Guagliumi, Italy

Ayla Hoogendoorn, The Netherlands

Niels Holm, Denmark

Sophinese Iskander-Rizk, The Netherlands

Farouc Jaffer, USA

Michael Joner, Germany

Jin Won Kim, Korea

Edmund Koch, Germany

Wolfgang König, Germany

Merel Leistikow, The Netherlands

Sean Madden, USA

Laura Marcu, USA

Thomas Milner, USA

James Muller, USA

Emile Nyns, The Netherlands

Rohit Oemrawsingh, The Netherlands

Stig Omholt, Norway

Yoshinobu Onuma, The Netherlands

Francesco Prati, Italy

Daniel Razansky, Germany

Richard Shlofmitz, USA

Eric Sijbrands, The Netherlands

Ulrich Sunderdiek, Germany

Yasunori Ueda, Japan

Heleen van Beusekom, The Netherlands

Ton van Leeuwen, The Netherlands

Theo van Walsum, The Netherlands

Tianshi Wang, The Netherlands

Robert Wilensky, USA

NATIONAL FACULTY

Ludwig K. von Segesser, Lausanne

LOCAL FACULTY

Maximilian Emmert, Zurich
Michele Genoni, Zurich
Erik Holy, Zurich
Mario Lachat, Zurich
Willibald Maier, Zurich
Robert Manka, Zurich
Christian Matter, Zurich

Carlos Mestres, Zurich
Slayman Obeid, Zurich
André Plass, Zurich
Barbara Stähli, Zurich
Christian Templin, Zurich
Alberto Weber, Zurich

HOST LIVE CASES (Andreas Grüntzig Catheterization Laboratories, UniversityHospital Zurich)

Fabian Nietlispach, Zurich

LIVE CASE OPERATORS (Andreas Grüntzig Catheterization Laboratories, UniversityHospital Zurich)

Erik Holy, Zurich
Slayman Obeid, Zurich
Mohammady Khalil Amin Shahin, Zurich

Patrick Siegrist, Zurich
Christian Templin, Zurich
Nooraldaem Yousif, Zurich

WORKSHOP FACULTY

Nikola Cesarovic, Switzerland
Andrea Guidotti, Switzerland
Edwin Ho, Switzerland
Miura Mizuki, Switzerland
Jurgen Ligthart, The Netherlands
Laura Rings, Switzerland

Matteo Saccocci, Switzerland
Patrick Siegrist, Switzerland
Mariusz Tomaniak, Poland
Tianshi Wang, The Netherlands
Karen Witberg, The Netherlands

POSTER PRESENTER

Vikram Baruah, USA

Marco Bologna, Italy

Leonardo Cecchetti, The Netherlands

Zafar Haroon, Ireland

Eline Hartman, The Netherlands

Jiawen Li, Australia

Callum Little, UK

Omeed Neghabat, Denmark

Mariusz Tomaniak, Poland

Néstor Uribe-Patarroyo, USA

Martin Villiger, USA

Mirjam Visscher, The Netherlands





08:00 - 08:30 REGISTRATION

08:30 - 08:40 OPENING

Francesco Maisano, Frank Ruschitzka

08:40 - 10:10 INNOVATIONS FOR PLAQUE IMAGING

Chair: Antonius van der Steen, André Plass

Combined OCT/NIRF imaging	Jin Won Kim
Nanoparticle based fluorescence molecular imaging	Farouc Jaffer
Seeing Cells & Sub-Cellular - Structures with Intracoronary μ OCT	Gary Tearney
Intravascular Megahertz Doppler OCT	Tianshi Wang
Polarization sensitive OFDI: histologic validation & in vivo imaging	Brett Bouma
Functional imaging targets: lipids or inflammation or both?	Eric Sijbrands

10:10 - 10:40 KEYNOTE LECTURE 1

Chair: Gijs van Soest, Ludwig K. von Segesser

Imaging Phenomics in light of the many dimensions of health and disease	Stig Omholt
---	-------------

10:40 - 11:10 POSTERS & COFFEE

10:40 - 11:10 WORKSHOP 1 (Kleiner Hörsaal OST B Hoer 5)
Navvus FFR catheter and HD-IVUS

11:10 - 12:10 NEW DATA ON CLINICAL UTILITY OF OCT

Chair: Lorenz Räber, Tom Adriaenssens

OCT benefits: Where to after Illumien III and DOCTORS?	Ziad Ali
OCT - what does it bring to a busy practioner?	Richard Shlofmitz
The EAPCI consensus on the use of invasive imaging	Giulio Guagliumi
OCT in stent implantation - what is the prognostic impact? (lessons from the CLIO-PCI-series)	Francesco Prati





12:10 - 12:40 **LIVE CASE 1**
Panel: Ziad Ali, Giulio Guagliumi,
Richard Shlofmitz, Francesco Prati

Welcome from Andreas Grüntzig Catheterization Laboratories Fabian Nietlispach

12:40 - 14:00 **LUNCH**

13:15 - 13:55 **WORKSHOP 2** (Kleiner Hörsaal OST B Hoer 5)
How to do OCT - Hands-on

14:00 - 15:15 **IMAGING IN INTERVENTIONS**
Chair: Carlo Di Mario, Mario Lachat

OCT characteristics and intracoronary physiology in native vessels	Javier Escaned
Relation between OCT imaging & functional assessment of stents	Tom Adriaenssens
OCT guided procedures in peripheral intervention	Ulrich Sunderdiek
Invasive imaging improves prognosis and saves lives - the evidence	Davide Capodanno

15:15 - 15:45 **LIVE CASE 2**
Panel: Davide Capodanno, Javier Escaned,
Carlo Di Mario, Fabian Nietlispach

15:45 - 16:30 **POSTERS & COFFEE**

15:55 - 16:25 **WORKSHOP 3** (Kleiner Hörsaal OST B Hoer 5)
How to use OCT in PCI - Tips & tricks



16:30 - 18:00 PLAQUE CHARACTERIZATION AND ACS

Chair: Brett Bouma, Carlos Mestres

The evolving landscape of ACS: an update (include lipid, erosion)	Michael Joner
Unique imaging contrast in coronary artery disease with fluorescence and ultrasound	Laura Marcu
IVUS and NIRS for the prediction of MACE-lessons from Atheroremo	Rohit Oemrawsingh
The lipid rich plaque study - a glimpse to the results	Carlo Di Mario
Not all AMIs are created equal: impact of ruptured plaque	Takashi Akasaka
Update on Prospect 2 Trial	David Erlinge

08:00 - 08:30 REGISTRATION**08:30 WELCOME DAY 2**

Evelyn Regar, Gijs van Soest

08:30 - 08:45 LIVE IN A BOX 1

Patrick Siegrist

Panel: Takashi Akasaka, Joost Daemen
Giulio Guagliumi, Robert Manka**08:45 - 10:00 LIPID LOWERING THERAPY: IMPACT ON PLAQUE**

Chair: Christian Matter, Heleen van Beusekom

New LDL lowering drugs - How to select the patients	Wolfgang König
Imaging lipids in vivo	Sean Madden
PACMAN AMI, a trial to assess vascular effects of PCSK9	Lorenz Räber
Inhibition on coronary atherosclerosis by NIRS, IVUS & OCT	
Impact of ezetimibe on stabilization & regression of intracoronary plaque as assessed by angiography	Yasunori Ueda
The role of imaging in focal and systemic therapy development	Yoshinobu Onuma

10:00 - 10:30 REVASCULARIZATION STRATEGIES

Chair: Niels Holm, Lorenz Räber

Post-PCI functional testing and imaging: case-based lessons from FFR-REACT	Joost Daemen
Excimer laser ablation	Antonio Colombo

10:30 - 11:15 POSTERS & COFFEE**10:40 - 11:10 WORKSHOP 4** (Kleiner Hörsaal OST B Hoer 5)

Indication for OCT - Guidelines and beyond



11:15 - 12:15 ANIMAL MODELS FOR IMAGING OF ATHEROSCLEROSIS

Chair: Jim Muller, Barbara Stähli

Atherosclerotic animal models of PCI: interplay between vessel response and stent-borne drugs Heleen van Beusekom

Real time imaging of hemodynamics in heart-failure models Daniel Razansky

Atherosclerotic animal models: a way to validate new imaging technology Rob Wilensky

The influence of shear stress metrics on plaque progression in an adult hypercholesterolemicpig model: multimodality imaging, biomechanics and histology Ayla Hoogendoorn

12:15 - 12:45 DEBATE

Chair: Jim Muller

«So... you're still working on new catheters?» John Ambrose

vs
«Intravascular imaging innovations save lifes!» Antonius van der Steen

12:45 - 14:00 LUNCH

13:15 - 13:55 WORKSHOP 5 (Kleiner Hörsaal OST B Hoer 5)

OCT - How to interpret the images, how to measure?





14:00 - 15:15 CARDIAC INTERVENTIONS

Chair: Ton van Leeuwen, Gijs van Soest

Optical imaging of heart valves & structural interventions	Edmund Koch
Video-assisted thoracoscopy in cardiac surgery	Alberto Weber
Photoacoustic guidance of left atrium ablation	Sophinese Iskander Rizk
Fiber-optic shape sensing for 3D instrument navigation	Merel Leistikow
Optogenetic generation of reversible local conduction block: demonstration in animals and perspectives for application	Emile Nyns

15:15 - 15:45 PERSPECTIVE LECTURE

Chair: Evelyn Regar

«I did it for the patients»: my journey from academia to industry and back to academia	Jim Muller
--	------------

15:45 - 16:15 POSTER AWARD & COFFEE

16:15 - 17:30 ADVANCED VISUALIZATION

Chair: Joost Daemen, Edmund Koch

Contour segmentation of the intima, media and adventitia layers in intracoronary OCT images Application to fully automatic detection of healthy wall regions	Theo van Walsum
Automated tissue type imaging with OCT	Ton van Leeuwen
Stent and vessel analysis of OCT	Yoshinobu Onuma
AI IV OCT Image Analysis for Tissue Characterization: Status, Challenges and Opportunities	Thomas Milner
3D OCT and bifurcations	Niels Holm

17:30 CLOSING

Antonius van der Steen





WORKSHOP 1

Navvus FFR catheter and HD-IVUS

Friday, 10:40 - 11:10 (30 min)

Kleiner Hörsaal OST B Hoer 5



GOALS

- Physicians understand the new HDi technology
- What is difference to measure FFR with the RXi?



TRAINERS

- M. Green, ACIST
- P. Siegrist, University Hospital Zurich
- P. Spiegel, BRACCO



PROGRAM

DURATION

• Introduction RXi	5 min
• Basics HDi	20 min
• Q&A	5 min

WORKSHOP 2

How to do OCT - Hands-on

Friday, 13:15 - 13:55 (40 min)

Kleiner Hörsaal OST B Hoer 5



GOALS

- Physicians know the OCT catheter and console
- Physicians know the steps how to perform a pullback
- Physicians can perform intracoronary OCT pullbacks



TRAINERS

- J. Ligthart, EMC Rotterdam
- P. Siegrist, University Hospital Zurich
- K. Witberg, EMC Rotterdam



PROGRAM

DURATION

• Presentation of the OCT catheter and console	5 min
• Principle of pullback	5 min
• Hands-on in small groups on different models	3 min



WORKSHOP 3

How to use OCT in PCI - Tips & tricks

Friday, 15:55 - 16:25 (30 min)

Kleiner Hörsaal OST B Hoer 5



GOALS

- Physicians can select patients and lesions for OCT imaging



TRAINERS

- Z. Ali, Columbia University New York
- J. Ligthart, EMC Rotterdam
- P. Siegrist, University Hospital Zurich
- K. Witberg, EMC Rotterdam



PROGRAM

DURATION

• Indications	6 min
• Contra-indications	6 min
• Caveats	6 min
• Trouble shooting	6 min
• Contrast saving	6 min



WORKSHOP 4

Indication for OCT - Guidelines and beyond

Saturday, 10:40 - 11:10 (30 min)

Kleiner Hörsaal OST B Hoer 5



GOALS

- Physicians understand indications for OCT imaging
- Physicians understand the advantages of OCT in different clinical circumstances



TRAINERS

- L. Räber, Inselspital Bern
- J. Ligthart, EMC Rotterdam
- P. Siegrist, University Hospital Zurich
- K. Witberg, EMC Rotterdam



PROGRAM

DURATION

- European Guidelines for the use of OCT
- The use of OCT
 - for procedure planning: Value of lumen profile view
 - to identify culprit lesion
 - to assess stent failure



WORKSHOP 5

OCT - How to interpret the images, how to measure?

Saturday, 13:15 - 13:55 (40 min)

Kleiner Hörsaal OST B Hoer 5



GOALS

- Physicians can perform clinically relevant measurements on OCT pullbacks (e.g. for OCT guided stent implantation)
- Physicians understand current possibilities of image analysis



TRAINERS

- J. Ligthart, EMC Rotterdam
- P. Siegrist, University Hospital Zurich
- K. Witberg, EMC Rotterdam



PROGRAM

- How to measure lumen diameter & area
- How to determine stent expansion
- How to determine lesion lengths and optimal stent length
- How to assess OCT images in complex clinical scenarios

DURATION



DIAMOND SPONSOR



GOLD SPONSORS



BIOTRONIK
excellence for life



LIFE FROM INSIDE

ACIST[®]
the power to

SILVER SPONSOR



BRONZE SPONSORS

infraredx[™]
A  **NIPRO** COMPANY

TERUMO INTERVENTIONAL
SYSTEMS

STANDARD SPONSORS

 **BIOSENSORS**
INTERNATIONAL


Caas

PHILIPS



UniversityHospital
Zurich



Course directors
Evelyn Regar
Gijs van Soest