



V MEDITERRANEAN WORKSHOP ON ADVANCED MOLECULAR IMAGING



*Multi Modality
and MultiParametric Imaging
in Advancing HealthCare*



V. MEDITERRANEAN THEMATIC FORUM ON ADVANCED MOLECULAR IMAGING

“Multi- modality and Multi-parametric Imaging in Advancing Healthcare”

May 31 to June 4, 2017, Orosei, Sardinia, Italy

Sessions Overview:

Day 1: ***Wednesday, May 31***

- 08:30 – 09:00 Session 1.1: Welcome addresses
- 09:10 – 10:10 Session 1.1: Introductory Session
- 10:40 – 12:25 Session 1.2: Research concepts/activities
- 12:25 – 14:30 Lunch break / Poster session 1
- 14:30 – 18:25 Session 1.3: Diagnostic Imaging, theranostics and the “-omics”
- 18:25 – 19:30 Round table 1: The relation of academia and industry in the development of medical and molecular imaging technologies.

Day 2: ***Thursday, June 1***

- 08:30 – 10:30 Session 2.1: Neurodegenerative diseases & brain disorders
- 11:00 – 13:00 Session 2.2: Brain biomarkers & brain imaging initiatives
- 13:00 – 16:00 Lunch break / Poster session 2
- 16:00 – 18:35 Session 2.3: Brain imaging – new technologies
- 18:35 – 19:30 Round table 2: Molecular imaging and -omics: competition or complementarity for Precision medicine?

Day 3: ***Friday, June 2***

- 08:30 – 12:05 Session 3.1: New Technologies for Molecular Imaging
- 12:05 – 15:30 Lunch break / Contributions/Poster session 3
- 15:30 – 16:20 Session 3.2: Molecular Imaging in the diagnosis, treatment and follow up of breast cancer
- 16:20 – 17:20 Coffee Break / Poster session
- 17:20 – 18:35 Session 3.3: Technologies for breast imaging/diagnosis
- 18:35 – 19:35 Round table 3: Multimodality multiparametric imaging in cancer management: How can it be improved?

Day 4: ***Saturday, June 3***

- 09:00 – 10:55 Session 4.1: Molecular Imaging in the management of prostate cancer
- 11:30 – 19:00 Conference Excursion
- 20:00 – 24:00 Conference Dinner

Day 5: ***Sunday, June 4***

- 08:00 – 09:25 Session 5.1: Molecular Imaging in surgical interventions
- 09:55 – 11:05 Session 5.2: Molecular Imaging in hadron therapy monitoring
- 11:05 – 11:30 Closing remarks of chair

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Day 1: Wednesday, May 31

08:30 – 09:00 Welcome Addresses

09:00 – 10:10 Session 1.1: Introductory Session (Moderator: Franco Garibaldi)

Nicolas Petrick

Center for Devices and Radiological Health (CDRH), Food and Drug Administration (FDA)

"FDA perspective on the role of FDA in the emerging field of precision medicine medical imaging" (35')

Bernd Stowasser, Sanofi-Aventis, on behalf of the European Federation of Pharmaceutical Industries and Associations (EFPIA):

"Academic-Industry partnership: Can the IMI PPP model be extended/exported to medical imaging industry?" (35')

10:10 – 10:40 Coffee break

10:40 – 12:00 Session 1.2: Research concepts/activities

Moderator: York Haemisch

Piotr Maniawski, Philips Healthcare, on behalf of the Association of Imaging Producers and Equipment Suppliers (AIPES)

"The AIPES organization and its role in supporting medical imaging development" (25')

Marco Paganoni, Univ. of Milano

"ERAMIT" (25')

Maurizio Conti, Siemens Healthineers, Knoxville

"Challenges and trends in molecular imaging, an industry research viewpoint" (30')

"The role of radiotracers in modern diagnosis and expensive/advanced therapies" (TDB) (30')

12:00 – 14:30 Lunch break / Poster session 1

14:30 – 16:15 Session 1.3: Diagnostic Imaging, theranostics and the "-omics"

Moderators: Bernd Pichler, Jonathan Disselhorst

David Townsend, National University of Singapore *"PET/CT, PET/MR and Precision Medicine: some alternative facts" (35')*

Bernd Pichler, Dept. of Pre-clinical imaging and Radiopharmacy, University of Tuebingen

"Combining multiparametric imaging data with -omics information for precision medicine" (35')

Constantin Lapa, Nuclear Medicine, University of Wurzburg

"Theranostics and multimodality imaging" (35')

16:15 – 16:45 Coffee break

16:45 – 18:25 Jonathan A. Disselhorst, University Tuebingen

"Imaging Tumor Heterogeneity" (35')

Paul Pevsner,

"How cost-effectiveness of a diagnostic medical imaging procedure is determined" (30')

Roderic Pettigrew

Director of the National Institute of Biomedical Imaging and Bioengineering (NIBIB)

"Multimodality/Multiparametric Imaging and Precision Medicine" (35')

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- 18:25 – 19:30** **Round table 1:**
The relation of academia and industry in the development of medical and molecular imaging technologies. Chair: Paul. Lecoq, CERN
Representatives of funding institutions, industries, MDs, physicists/technologists
Outcome: proposals for improvement of academia-industry relation
- Day 2: Thursday, June 1**
- 08:30 – 10:30** **Session 2.1: Neurodegenerative diseases & brain disorders**
Moderators: Vesna Sossi, Christer Halldin
Charles R.G. Guttman, Center for Neurological Imaging, Harvard Medical School
"Neurodegenerative diseases – an overview" (30')
Valentina Garibotto, Neurological Imaging, University of Geneva
"Multimodal/multiparameter imaging – main modalities and applications: their link to biomarkers and personalized medicine" (30')
Martin Walter, University of Tuebingen, Germany
"Multimodal imaging in psychiatry" (30')
Vesna Sossi, University of British Columbia
"Brain Receptor Imaging" (30')
- 10:30 – 11:00** **Coffee break**
- 11:00 – 13:00** **Session 2.2: Brain biomarkers & brain imaging initiatives**
Moderators: Alberto Del Guerra, Jose' Maria Benlloch
Christer Halldin, Karolinska Institutet, Stockholm:
"PET Radioligands for Neuroscience and Drug Development" (30')
Ilan Rabiner, Chief Medical Officer, Head of Imaging Applications, Imanova Ltd., UK
"Building the "Three Pillars"- Imaging in early phase drug development" (30')
Paul M. Matthews, Head of Brain Imaging Sciences, Imperial College, London
"Challenges and opportunities for brain imaging with large population datasets" (30')
Simone Sarasso, Dept. of Biomedical Sciences, University of Milano
"Major brain initiatives" (30')
- 13:00 – 16:00** **Lunch break / Poster session 2**
- 16:00 – 16:50** **Session 2.3: Brain imaging – new technologies**
Moderators: Alberto Del Guerra, Jose' Maria Benlloch
Stan Majewski, University of Virginia
"Dedicated PET brain imaging devices" (25')
Bernd Pichler, Director, Dept. of Pre-clinical imaging and Radiopharmacy, University of Tuebingen
"Developments in MRI, MEG and EEG" (25')
- 16:50 – 17:20** **Coffee break**
- 17:20 – 18:35** **Session 2.3 cont**
Jose Maria Benlloch, Institute of Molecular Imaging, University of Valencia
"Mindview: multimodal imaging of neurological disorders" (25')
Alberto del Guerra, Department of Physics, University of Pisa
"A trimodality (EEG/MR/PET) scanner for brain imaging " (25')

Contributions (25")

18:35 - 19:35 **Round table 2:**
Molecular imaging and -omics: competition or complementarity for Precision medicine? Chair: Vesna Sossi, UBC, Vancouver
 Representatives of funding institutions, industries, MDs, physicists/technologists

Day 3: Friday, June 2

08:30 – 09:55 **Session 3.1: New Technologies for Molecular Imaging**
Moderator: Y. Haemisch
Paul Lecoq, CERN, Geneva
"The 10 ps TOF-PET challenge" (25')
Dennis Schaart, Department of Rad. Science & Technology, TU Delft
"Fundamentals of Ultrafast Timing" (25')
Terry Jones, University of California, Davis
"The Explorer project: a new paradigm in nuclear medicine?" (35')
Piotr Maniawski, Philips Healthcare, Cleveland
"Digital Photon Counting PET: technology powering precision molecular imaging" (30')

10:25 – 10:55 **Coffee break**

10:55 – 12:25 **Session 3.1 cont**

Bipin Singh, RMD Watertown, Ma *"Photonic Crystal Enhances Scintillation Light Extraction: Can It Improve Timing Resolution?" (20')*
Claudio Piemonte, FBK Trento
"ToF performance of FBK Silicon Photomultipliers coupled with scintillators for TOF-PET application" (25')
Stefaan Tavernier, PETsys Electronics SA, Lisbon:
"TOFPET II: The next generation ASIC for TOF-applications" (25')
Gabriela Llosa, Instituto de Fisica Corpuscular, University of Valencia
"From MACACO to MACACO II: a Compton telescope for hadron therapy treatment monitoring" (20')
Ilaria Mattei, INFN Milano: *"Characterisation of the secondary fast and ultrafast neutrons emitted in Particle Therapy with the MONDO experiment" (15')*

12:40 – 15.30 **Lunch break / Poster session 3 Moderator: tbd**

15.30 – 16:20 **Session 3.2: Molecular Imaging in the diagnosis, treatment and follow up of breast cancer Moderators: Stan Majewski, Orazio Schillaci**
Orazio Schillaci, Università degli Studi di Tor Vergata, Roma
"The role of Nuclear Medicine in breast cancer management" (25')
Michael O' Connor, Mayo Clinic Rochester
"Breast cancer screening with single gamma and positron emitters" (25')

16:20: – 17:20 **Coffee break with posters**

17:20 – 18:10 **Session 3.3: Technologies for breast imaging/diagnosis**
Mod Moderators: Stan Majewski, Orazio Schillaci

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Michel Herranz, Univ. of Santiago de Compostela

"Dedicated breast PET (dbPET) in diagnosis and follow up of breast cancer - comparison, synergies and divergences with MRI" (25')

Volkmar Schulz (University of Aachen, DE)

"PET-MR dedicated detector for breast cancer diagnosis and follow – up" (25')

Contributions

18:30 – 19:30 **Round table 3: Multimodality multiparametric imaging in cancer management: How can it be improved?** Chair: David Townsend, Singapore

20:00 Conference Dinner

Day 4: *Saturday, June 3*

08:00 – 9:40 **Session 4.1: Molecular Imaging in the management of prostate cancer**

Moderators: F. Garibaldi, Henk Van der Poel

Henk Van der Poel, Amsterdam, Ne

"Multimodality Imaging in Surgery" (25')

Valeria Panebianco, Università degli Studi di Roma "La Sapienza"

"The role of multiparametric MR in the diagnosis and follow up of prostate cancer" (25')

Tobias Maurer, Klinikum rechts der Isar, TU Munich

"Shifting gears in Imaging - how PSMA-PET is about to change prostate cancer diagnosis" (25')

Paul Lecoq, CERN, Geneva

"ENDO-TOF-PET-US in the diagnosis and follow up of prostate cancer" (25')

9:40 – 10:10 Coffee break

10:10– 10:55 **Franco Garibaldi**, AIB, Roma

"TOF-PET-MR in the diagnosis and follow up of the prostate cancer" (25')

Nicoletta Protti, INFN Pavia

"In vivo ¹⁰B imaging and dose rate measurement for Boron Neutron Capture Therapy (BNCT) using Single Photon Emission Computed Tomography (BNCT-SPECT)" (20')

11:30 Conference Excursion

Day 5: *Sunday, June 4*

08:00 – 9:25 **Session 5.1: Molecular Imaging in surgical interventions**

Moderators: Fijs Van Leuven, Tobias Maurer

Fijs van Leuven, LUMC, Leiden

"Multimodality imaging techniques in surgery" (25')

Tobias Maurer, Klinikum rechts der Isar, TU Munich

"PSMA radioguided surgery – a novel technique for intraoperative detection of prostate cancer metastases"(20')

Elana Solfaroli, Università degli Studi di Roma "La Sapienza"

"Radioguided surgery with β -radiation: test on ex-vivo specimen" (20')

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Contribution

9:25 – 9:55	Coffee break
9:55 – 11:05	<p>Session 5.2: Molecular Imaging in Hadron Therapy Monitoring</p> <p>Moderators: Fijis Van Leuven, Tobias Maurer</p> <p>Piergiorgio Cerello, INFN Torino</p> <p><i>“Imaging in hadron therapy” (25’)</i></p> <p>Francesco Pennazio, INFN Torino</p> <p><i>“The INSIDE project: hadron therapy monitoring with in-beam PET” (25’)</i></p> <p>Ilaria Mattei, INFN Milano: <i>“Study of the radiation produced by therapeutic He, C and O ion beams impinging on a PMMA target for beam range monitoring purpose in Particle Therapy” (20’)</i></p>
11:05 – 11:30	Closing remarks (TBD)
12:00	Departure (first bus leaves)



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