

ESMPE European School for Medical Physics Experts

## Nuclear Medicine Dosimetry, Practical approach

Jointly organised by ESMPE and ESMIT

24<sup>th</sup>-26<sup>th</sup> January 2019, Prague, Czech Republic

The EFOMP and EANM (The European Association of Nuclear Medicine) in collaboration with the Czech Association of Medical Physicists and the Department of Dosimetry and Application of Ionizing Radiation of Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague would like to invite you to the next ESMPE in **Nuclear Medicine 2019**.

The school is aimed at advanced tasks connected with radiopharmaceutical dosimetry in a context of therapeutic nuclear medicine. The school will cover mostly practical computing aspects, on freely available software (Slicer 3D).

This two-and-half day event will be accredited by EBAMP (European Board of Accreditation for Medical Physics) and is intended for practising clinical Medical Physicists who are involved in Nuclear Medicine dosimetry. As is the case in most ESMPE schools, there will be an optional examination at the end for those seeking a higher level of certification beyond attendance.

### Content

**Refresher on the basics of Radiopharmaceutical Dosimetry** – Radiopharmaceuticals and clinical applications - TRT and SIRT – relevance of dosimetry

**Introduction to Slicer** – Basic features – Plugins – Input / Output – basic image/data processing

**SIRT Dosimetry** – Data input – DICOM files management – Image segmentation – Absorbed dose calculation – Result output

**TRT Dosimetry**- Data input – DICOM files management – image fusion - Image segmentation – Absorbed dose calculation– Result output

**Dosimetry Optimization** – Implementing robustness in nuclear medicine dosimetry – Scripting – Electronic notebooks.

### Final exam

The final exam is voluntary. Participants can gain additional credits when successfully pass the test.

### Organizers

**Jaroslav Ptáček, Tereza Kráčmerova** (Czech Republic)

**Manuel Bardiès** (Scientific Chair), **Alberto Torresin** (Chair of the School)

## Faculty

<b>Manuel Bardiès</b>	CRCT, Toulouse, France.
<b>Carlo Chiesa</b>	Istituto Tumori, Milan, Italy
<b>Ludovic Ferrer</b>	ICO, St Herblain, France
<b>Glenn Flux</b>	Joint Department of Medical Physics, RMH, Sutton, UK

## Time-table

Thursday 24 <sup>th</sup> January 2019				
	Session	Title	Description	Lecturer
8:00-9:00	Registration			
9:00-10:00	Setting the Scene	Nuclear Medicine Dosimetry	Diagnostic vs. Therapeutic Nuclear Medicine – Nomenclature (TRT, MRT, SIRT, RIT, et.) - Aims of dosimetry – Main steps of patient-specific dosimetry.	Bardiès
10:00-10:30	Coffee break			
10:30-11:30	First steps with Slicer	Introduction to Slicer	Input/output DICOM Visualization	Ferrer
11:30-12:30		Slicer modules that can be used for Nuclear Medicine Dosimetry	Dicom (RT) Advanced Visualisation Image fusion Segmentation	Ferrer
12:30-14:00	Lunch break			
14:00 -16:00	SIRT (1)	SIRT Example	Presentation of a clinical case Data Input Visualisation Definition of the dosimetry workflow	Chiesa
16:00-16:30	Coffee break			
16:30 -18:00	SIRT (2)	SIRT Example (continued)	Advanced processing Segmentation Result output	Chiesa
20:00-23:00	Social dinner - participants + lecturers			

## Time-table

Friday 25 <sup>th</sup> January 2019				
	Session	Title	Description	Lecturer
9:00-10:00	MRT Dosimetry	Patient Specific Dosimetry in MRT	Introduction to MRT dosimetry concepts Pre- vs. peri- vs. post therapeutic dosimetry	Flux
10:00-10:30	Coffee break			
10:30-12:30	PRRT (1)	PRRT Example	Presentation of a clinical case Data Input Visualisation Definition of the dosimetry workflow	Flux
12:30-14:00	Lunch time			
14:00-16:00	PRRT (2)	PRRT Example (continued)	Advanced processing Image registration Segmentation	Flux
16:00-16:30	Coffee break			
16:30-18:00	PRRT (3)	PRRT Example (continued)	TAC Fitting Absorbed dose calculation Post processing and presentation of results	Flux
Saturday 26 <sup>th</sup> January 2019				
	Session	Title	Description	Lecturer
9.00-11:00	Optimization (1)	Tools for improving dosimetry reproducibility	Presentation of tools that allow increasing traceability of dosimetric calculations (Electronic notebooks)	Ferrer
11:00-11:30	Coffee break			
11.30-13:00	Optimization (2)		Round Table	Ferrer
13:30-15:00	Final examination			

## Further Information

Course language	English
Level	MPE
Registration fee* (2 main meals, 5 coffee breaks, 1 social dinner)	300 € 350 € (from 09.12.2018)
Reduced registration fee* <ul style="list-style-type: none"> <li>• subsidized by EFOMP</li> <li>• first-come, first-served policy</li> <li>• deadline for application (23.12.2018)</li> </ul>	150 € - for the first 10 attendees (max. 2 from one country) coming from the following European countries: Albania, Belarus, Bosnia, Herzegovina, Bulgaria, Croatia, Cyprus, Estonia, Greece, Hungary, Kosovo, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Turkey, Ukraine.
Maximum number of participants	40
Duration	24 <sup>th</sup> January 2019 – 26 <sup>th</sup> January 2019
Study load	16 hours of lectures and demonstrations
Venue	Department of Dosimetry and Application of Ionizing Radiation, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague, Břehová 7, 115 19 Prague 1, CZECH REPUBLIC
GPS coordinates	50°5'27.737"N, 14°24'58.713"E
Accommodation	Individual
Information, program, etc. Practical information at:	<a href="http://www.efomp.org">www.efomp.org</a> to be announced
Registration	Electronic registration via EFOMP <a href="#">website</a>
Registration period	1st September 2018 – 23 <sup>rd</sup> December 2018

\* payment must be done in 14 days following the pre-registration, otherwise pre-registration will be cancelled and neither free place nor subsidized or ordinary fee can be granted for repeated registration

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