PET BASICS-course

Dates:	6.–8.4.2021
Place:	Zoom
Organiser:	Turku PET Centre
Language:	English
Target attendees:	Physicians, scientists, PhD students, all interested in PET

Course is free of charge and worth of 2.0 credits for MSc and PhD degree, and 15 h for MD specialist's degree.

Positron emission tomography (PET) is non-invasive and quantitative imaging modality using molecules labelled with positron-emitting radioisotopes in tracer quantities (i.e. without pharmacological effect) to visualize and measure rates of biochemical processes (e.g. enzyme reactions, ligand-receptor interactions, cellular metabolism, cell proliferation, gene expression) in tissues of living subjects. Therefore, PET is an important tool to elucidate mechanisms associated with diseases and drug actions. The course aims to provide students with a broad and general introduction to the PET imaging. The main purpose of this course is to enable students to understand the interdisciplinary nature of PET imaging. After the course one should have basic knowledge of the PET imaging field of its physics, radiochemistry, and data analysis, research and clinical applications.

Please **register latest March 22, 2021** to Lenita Saloranta lenita.saloranta@utu.fi

Further information: Prof Anne Roivainen, anne.roivainen@utu.fi

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Tuesday 6.4.2021

8.15–8.45	Anne Roivainen	Introduction of PET and Turku PET Centre
8.45–9.15	Mika Teräs	Radiation physics and safety
9.15–9.45	Mika Teräs	PET instrumentation
	Coffee break	
10.00–10.30	Olof Solin	Introduction to radiopharmaceutical chemistry
10.30–11.00	Olof Solin	Production of PET radionuclides
	Lunch	
12.00–12.30	Semi Helin	Carbon-11 and oxygen-15 radiochemistry
12.30–13.00	Anu Airaksinen	Fluorine-18 radiochemistry
13.00–13.30	Xiang-Guo Li	Radiochemistry of radiometals: ^{68}Ga, ^{64}Cu and ^{89}Zr
	Coffee break	
13.45–14.15	Riikka Kivelä	Radiopharmacy and GMP guidelines for PET
14.15–14.45	Riku Klen	Image acquisition and reconstruction
14.45–15.15	Sergey Nesterov	Information technologies and image analysis in PET

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Wednesday 7.4.2021

8.45–9.15	Ilkka Heinonen	PET imaging of exercise responses
9.15–9.45	Richard Aarnio	Radiometabolism of PET tracers
	Coffee break	
10.00–11.00	Marco Bucci	Quantification of PET
	Lunch	
12.00–12.30	Marcus Sucksdorff	Imaging of neuroinflammation with PET
12.30–13.00	Jussi Hirvonen	Neurotransmitter systems studied with PET
13.00–13.30	Lauri Nummenmaa	Statistical analysis of brain-PET data
	Coffee break	
13.45–14.15	Pirjo Nuutila	Quantitative PET imaging of metabolic diseases
14.15–15.15	Jukka Kemppainen	PET in cancer diagnosis and therapy
15.15–15.45	Marko Seppänen	PET in the diagnosis of neuroendocrine tumors

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Thursday 8.4.2021

8.15–8.45	Tove Grönroos	Small animal imaging and pre-clinical evaluation of PET tracers
8.45–9.15	Xiang-Guo Li	Development process of PET radiopharmaceuticals
9.15–9.45	Sami Kajander	Multimodality imaging using CT, MRI and PET
	Coffee break	
10.00–10.30	Juhani Knuuti	PET in clinical cardiology
10.30–11.00	Juha Rinne	PET in clinical neurology
	Lunch	
12.00–12.30	Anne Roivainen	Preclinical inflammation research
12.30-13.00	Antti Saraste	Preclinical cardiovascular research
	Coffee break	
13.15–13.45	Jukka Kemppainen	PET imaging of infection/inflammation
13.45–14.15	Jukka Kemppainen	Oncological research
14.15–14.30	Anne Roivainen	Closing words