PET is Wonderful
Annual Scientific Meeting 2019

29th October 2019
Royal Society of Edinburgh, Scotland

Meeting Organisers:
Adriana Tavares, Edinburgh Imaging, UK
Anne Grant, Edinburgh Imaging, UK
Catriona Anderson, BHF/University CVS, UK
Molly Osborn, BHF/University CVS, UK

Abstract Review Scientific Committee:
Anthony Gee, King's College London, UK
Gillian McNaught, Edinburgh Imaging, UK
Paul Maguire, UCB, Belgium
Sally Pimlott, University of Glasgow, UK
Terry Jones, UC Davis, USA

VIP PET Prize Judges:
Adriana Tavares, Edinburgh Imaging, UK
Christophe Lucatelli, Edinburgh Imaging, UK

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FINAL MEETING PROGRAMME	
9:00 – 9:30	Welcome and registration
9:30 – 9:40	Opening of PiW2019, Dr Adriana Tavares, University of Edinburgh, UK
9:40 – 10:10	**Oral presentations session 1 – Instrumentation** **Chair: Dr Gillian Macnaught, University of Edinburgh, UK**
	"Optimization of Bayesian penalized likelihood reconstruction parameters for quantitative brain Positron Emission Tomography (PET) imaging", Ms Daniela Ribeiro, inviCRO, UK
	"Adaptive Total-Body PET", Prof Stefaan Vandenberghe, Ghent University, Belgium
10:10 – 10:40	**Oral presentations session 2 – Cardiometabolic PET imaging** **Chair: Dr Mark MacAskill, University of Edinburgh, UK**
	"Bone marrow adipose tissue is a unique adipose subtype with distinct roles in systemic glucose homeostasis", Dr Karla Suchacki, University of Edinburgh, UK
	"Understanding the fate and function of MSCs in islet transplantation using PET", Dr Paul Burgoyne, University of Edinburgh, UK
10:40 – 11:10	**Tea and coffee morning break** Exhibitors and poster browsing. Delegate Engagement Prize.
11:10 – 11:40	**Oral presentations session 3 – Heart:Brain PET imaging** **Chair: Dr Catriona Wimberley, University of Edinburgh, UK**
	"Novel TSPO radiotracer, ^{18}F-LW223, can image inflammation *in vivo* in a preclinical myocardial infarction model", Dr Mark MacAskill, University of Edinburgh, UK
	"The challenges of preclinical brain imaging from mouse to rats: a story of resolution illustrated by research examples", Dr Herve Boutin, Manchester University, UK
11:40 – 12:20	**Keynote speaker talk 1** **Chair Dr Gerry Thomson, University of Edinburgh, UK**
	"PET neuroimaging of the serotonin system: from rat to pig to Man" Prof Gitte Knudsen, Copenhagen University, Denmark
12:20 – 13:50	**Industry sponsored lunch and poster session** Sponsor pitches. Exhibitors and poster browsing. Delegate Engagement Prize.
13:50 – 14:20	**Oral presentations session 4 – PET imaging in oncology** **Chair: Dr Christophe Lucatelli, University of Edinburgh, UK**
	"Synthesis of Novel PET Imaging Agents for PARP-1 Based on Olaparib-Derived Inhibitors", Ms Holly McErlain, University of Glasgow, UK
	"Visualising 3D tumour kinetics by multi-transgenic vectors identifies resistant closes at nanoliter resolution", Dr David Lewis, University of Glasgow, UK
14:20 – 15:00	**Keynote speaker talk 2** **Chair Dr David Lewis, University of Glasgow, UK**
	"Imaging cancer metabolism in patients: FDG PET and beyond" Prof David Mankoff, University of Pennsylvania, USA
15:00 – 15:30	**Tea and coffee afternoon break** Exhibitors and poster browsing. Delegate Engagement Prize.
15:30 – 16:45	**Total-Body PET brainstorming session**
	Opening: "So, what is Total-Body PET? And what can we do with it?", Prof Terry Jones, UC Davis, USA
15:45 – 16:45	Brainstorming session. Moderators: *Dr Adriana Tavares, Prof Stefaan Vandenberghe and Prof Terry Jones*
16:45 – 17:00	**Meeting Prizes and End of Meeting**

Keynote Speakers:

Professor Gitte Knudsen

Prof Knudsen is a Professor of neurobiology, Chief Consultant and Chairmain of the Neurobiology Research Unit and Director of Center for Experimental Medicine Neuropharmacology (NeuroPharm) at the Copenhagen University. Her previous appointments included visiting scientist at NIH and at Stony Brook, USA (1985-90), at Institute of Physiology, Bonn, Germany (1988-89), and at MGH Harvard, Boston (2011-12). As well as, Director of Center for Integrated Molecular Brain Imaging (Cimbi) 2006-15. Prof Knudsen's scientific interests include blood-brain barrier transport, neurobiology of cerebral blood flow and metabolism and the neurobiology of cerebral neurotransmission with particular emphasis on molecular brain imaging. She has published over 351 scientific papers and reviews, as well as, 28 books/book chapters. Since 1999, Prof Knudsen supervised a total of 24 PhD-students who have defended their PhD thesis. Currently, she is supervising 9 PhD students and mentoring 10 post docs. Prof Knudsen is the Field Editor at the International Journal of Neuropsychopharmacology since 2013. She is a past member of the Board of Directors of the Brain Prize (2013-17) and a current member of the Brain Prize Council (since 2017), a scientific advisor for the Kristian G. Jebsen Foundation, Norway (since 2014) and a board member of the Elsass Foundation (since 2015). Prof Knudsen is also the President-elect of the European College of Neuropsychopharmacology (ECNP) since 2016 and the Chair of the Scientific Advisory Board for The Human Brain Project since 2017.

Professor David Mankoff

Prof Mankoff is the Gerd Muehllehner Professor of Radiology, Vice-Chair for Research in Radiology, and Director of the PET Center at the Perelman School of Medicine at the University of Pennsylvania. He also serves as the Director of the Penn Radiology Department's PET Center and as the Associate Director for Education and Training for Penn's Abramson Cancer Center. Prof Mankoff is board-certified in Nuclear Medicine and holds a PhD in Bioengineering focusing on PET instrumentation. He practices Nuclear Medicine at the University of Pennsylvania, with a special interest in oncologic applications of molecular imaging and radionuclide treatment of endocrine tumors and other cancers. Prof Mankoff's research focuses on molecular imaging of cancer, primarily on breast cancer, and emphasizes therapeutic monitoring, identifying factors mediating therapeutic resistance, and the translation of new methods to clinical trials. He also focuses on imaging methodology and quantitative imaging methods related to molecular cancer imaging. Prof Mankoff is a Komen Scholar for the Susan G. Komen Foundation. He also Chairs the Experimental Imaging Sciences Committee and serves as Co-Chair of the Scientific Program Committee of ECOG-ACRIN. Prof Mankoff is a past member and President of the American Board of Nuclear Medicine and is on the editorial boards of Nuclear Medicine and Biology, Breast Cancer Research, Journal of Nuclear Medicine, The Breast Journal, and Clinical Cancer Research and serves as an Associate Editor for Breast Cancer Research and the Journal of Nuclear Medicine.

List of Posters:

No.	Presenter Name	Poster Title
1	Agne Stadulyte	Cellular expression of the 18kDa translocator protein (TSPO) in relation to novel PET TSPO radiotracer, ^{18}F-LW223, binding in mouse brain
2	Catriona Wimberley	Correlating estimated brain perfusion parameters between ^{18}F-Flutemetamol PET and ASL-MRI during simultaneous PET-MRI
3	Daniela Bochicchio	[^{11}C]leucine PET imaging to measure cerebral protein synthesis rate in rats
4	Robert Shaw	Chromatographic method for assessment of pharmacokinetics/ pharmacodynamics of TEFM01180, a new Positron Emission Tomography (PET) radiotracer for imaging Sphingosine-1-Phosphate-5 receptors in brain
5	Benjamin Thomas	The sexual dimorphic effects of calorie restriction in mice and humans - PET/CT imaging to identify systemic and tissue-specific differences
6	Viktoria Balogh	Investigating myocardial fibrosis activity with ^{18}F-Fluoroproline Positron Emission Tomography (PET) in rat models of cardiovascular disease
7	David Mellis	Role for microRNA-26b in vessel calcification
8	Carlos Alcaide-Corral	Computed Tomography (CT) Imaging of Coordination Cages, Potentially Biocompatible CT Contrast Agents
9	Wendy Mcdougald	Will standardisation of preclinical PET/CT protocols across multiple scanners reduce quantitative bias in image data while maintaining image quality?
10	Stuart Johnson	PET detector modelling and performance evaluation
11	Charlotte Hill	Investigating the sensitivity of simulated total-body positron emission tomography systems in Geant4

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