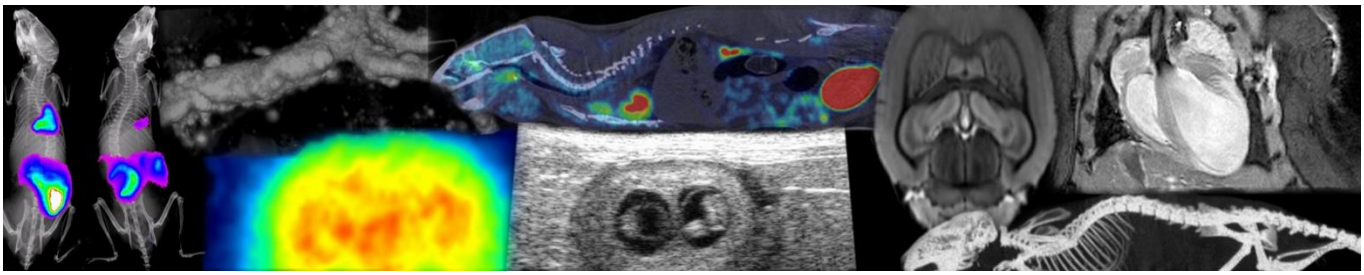

Edinburgh Preclinical Imaging

Newsletter August 2026

Welcome

After a five year hiatus, we have revived the Edinburgh Preclinical Imaging Newsletter.

We have a few new faces, initiatives, and equipment therefore the revival is well timed with the the formation of the Institute for Neurological and Cardiovascular Research.

Please get in touch!

Contents

Who's who?

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Who's new(ish)?

I started in January 2025, having spent the previous 10 years as Associate Professor of Neuroscience at the University of Nottingham. I have always used MRI starting with my post-graduate studies through to post-doctoral training and even served previously served as Director of a 7T MRI Facility during my time at the Charité University Medicine. Most of my research is centred around cerebrovascular disease, and I make use of rodent models (even large animal models). I have already met so many amazing people and look forward to further integration into the Edinburgh Research community.

Tracy Farr

Dr Aish Mishra

Hi, I am Aish Mishra, a radiochemist and preclinical imaging scientist with a PhD from King's College London and Imperial College London's CDT in Smart Medical Imaging. My background spans radiotracer synthesis, radiolabelling with a wide range of radionuclides, focussed ultrasound mediated drug delivery to brain, and hands-on operation of PET-CT and SPECT-CT platforms for tracking of small molecules, antibodies, liposomal/lipid nanoparticles, cells/cell therapies in murine models.

Having spent almost a decade working at the intersection of chemistry and imaging - across cancer, brain, and cardiovascular applications, in this role as a Deputy Preclinical PET Facility Manager, I'm excited to work with researchers at the PET preclinical facility and help drive innovative imaging science here at Edinburgh. Do reach out @aishwarya.mishra@ed.ac.uk to discuss possible preclinical imaging projects and collaborations.

I'm Gianluca Destro, and I recently joined the University of Edinburgh as a Preclinical and Translational Radiochemist in the Centre for Cardiovascular Science with Prof. Adriana Tavares. Originally trained in Italy (University of Torino), I completed my PhD at CEA Saclay in France, where I worked on CO_2-based chemistry for radiolabelling. I've since had the chance to work across the UK and Europe, including research roles at the University of Oxford, where I worked with fluorine-18 and iodine-123 to develop radiolabelled PARP inhibitors for imaging and Auger therapy, and at the University of Torino, where I supported the development of new radiotracers for cancer imaging and therapy, including work with lutetium-177 and technetium-99m. I also had research visits in Sweden along the way. I'm excited to bring this experience in radiochemistry and tracer development into cardiovascular and translational imaging projects at Edinburgh. Outside the lab, you'll usually find me at the gym or taking the opportunity to explore Scotland whenever I can, and I'm always happy to chat and meet new colleagues across the university.

Dr Gianluca Destro

New funding initiatives

Functional Ultrasound Scanner – Spring 2026
Carmel M Moran, Professor of Translational Ultrasound

The preclinical ultrasound imaging group is delighted to have been awarded an MRC mid-range equipment grant and INCR capital equipment funding to purchase a functional ultrasound scanner (fUS). The scanner is manufactured by Iconeus (https://iconeus.com/) and is capable of providing high resolution imaging of **brain vasculature** and **brain function** including but not limited to:

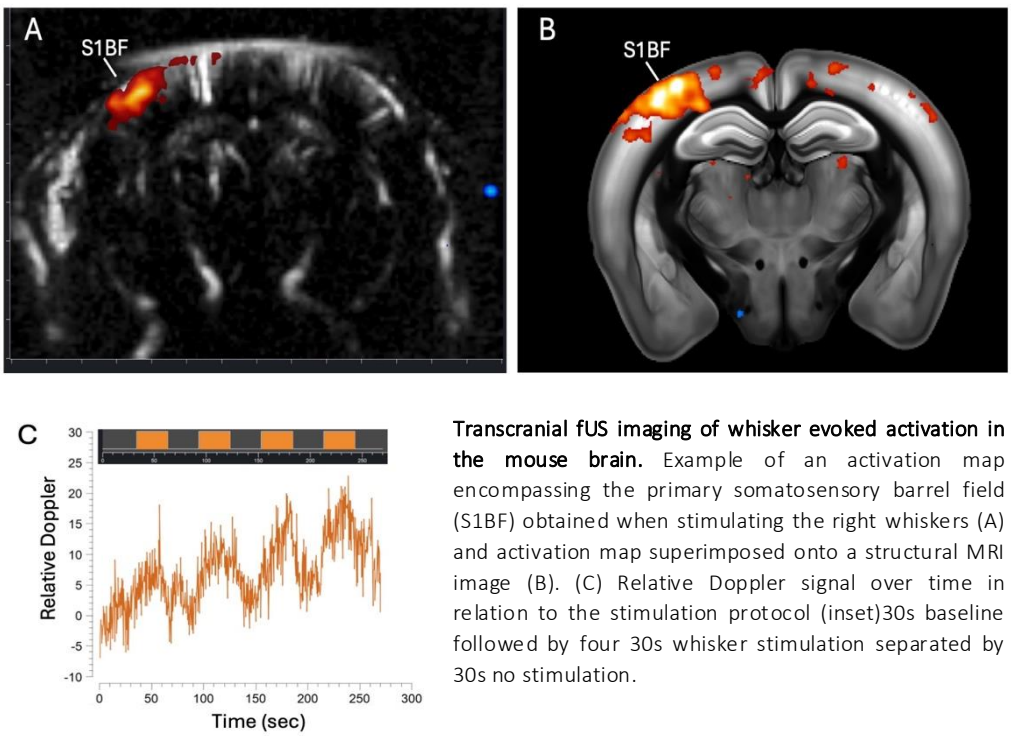
Dynamic imaging of blood flow, crucial for studying conditions like hypertension, heart failure, and vascular diseases and to understand the role of cerebral blood flow in in brain function, development, and neurodegenerative diseases.

Multi-modal studies that integrate fUS imaging with other techniques (e.g. EEG, multi-electrode arrays, PET/MRI, optical imaging, optogenetics or guided injections) to provide a comprehensive view of brain and cardiovascular interactions.

Pathophysiological insights on the effects of vascular diseases on neurological health, such as the impact of stroke on cognitive function or by assessing blood flow changes during brain development, aiding developmental disorder research and early interventions.

Therapeutic development by assessing the efficacy of therapies that target both cardiovascular and neurological systems, potentially leading to novel treatment approaches.

Monitoring brain activity through capturing rapid changes in blood flow during cognitive tasks or experimental interventions, in either anaesthetised or awake, behaving animals.

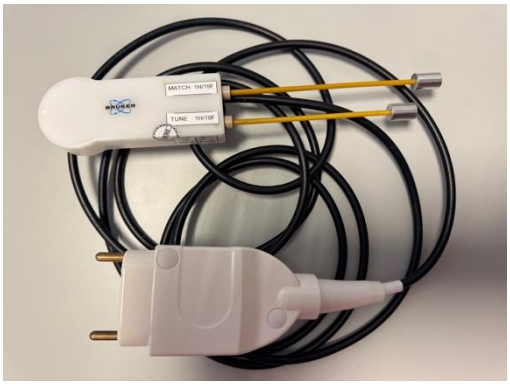


Transcranial fUS imaging of whisker evoked activation in the mouse brain. Example of an activation map encompassing the primary somatosensory barrel field (S1BF) obtained when stimulating the right whiskers (A) and activation map superimposed onto a structural MRI image (B). (C) Relative Doppler signal over time in relation to the stimulation protocol (inset)30s baseline followed by four 30s whisker stimulation separated by 30s no stimulation.

The scanner has been installed and the first experiments are ongoing. Please get in touch with Carmel for more information.

New funding initiatives

As part of a grant from the Michael J Fox Foundation to C Coxon, M Horrocks and T Farr, we were able to purchase a new 19F coil for the 9.4T system. This will enable visualisation of fluorine based MRI tracers for early diagnosis of Parkinson's disease. Get in touch if you are interested in X-nuclei imaging!



EPI helped host a delegation from Ajou and Sungkyunkwan Universities in Korea in March 2026 for a kick off meeting for the **T**herapeutic **A**lliance for **R**esearch on **G**lobal **E**ndothelial **T**argets in **V**ascular **N**euro**D**egeneration (TARGET-VND). The project is an innovative international collaboration leveraging five integrated research platforms to discover precision therapeutic targets for vascular neurodegeneration. This consortium combines Korean expertise in human cell modeling and genetics with Edinburgh's leadership in clinical small vessel disease research, animal modeling, and advanced neuroimaging to create a comprehensive approach to therapeutic target discovery for VND.

EPI on tour!

Ross visited the Molecular Imaging Core at the University of Virginia in April 2026 to learn about the latest advancements in cardiac MRI after being awarded a competitive Knowledge Exchange Placement Programme from the UK Institute for Technical Skills and Strategy (UK ITSS). He has also been selected from over 100 applications to represent the University of Edinburgh at the UK ITSS Higher Education Takeover at the Science Museum in London. This public engagement event will be hosted in The David Sainsbury Gallery, where 11-16 year olds, their parents/carers and their teachers will be introduced to the vast, varied, and often hidden world of technicians. The aim is to empower exploration of skills and job opportunities in the Technology Specialists Network: Research Technical Professional Opportunities, Knowledge and Skills (TSN ROKS) disciplines.

Thanks to his engagement, Ross is now part of the UK ITSS Equipment Sharing Funding Panel, where he can contribute his expertise to shape funding decisions. Ross has presented at symposiums, participated in focus groups, and job shadowing exchanges for the InFrame funded cross-institutional Scottish Research Technical Professionals Academy (SRTPA). This culminated in Ross being awarded funding to attend the UK ITSS TSN Conference in Stratford-Upon-Avon in April 2026.

Tracy recently attended an Open Data Science in Stroke meeting at the University of Kentucky to discuss creation of a data repository for preclinical stroke researchers.

She presented at the International Stroke Conference in New Orleans and was invited to give a seminar at Tulane University.

Adrian attended the Wellcome InFrame RELAX leadership course.

InFrame
RELAX
RTP

Some interesting conferences on the horizon that EPI has helped organise!

Microvasculature as a key regulator of health and disease in the brain and beyond
April 16-17, 2026, London
Invited speaker University of Edinburgh: Axel Montagne

UK Stroke Research Workshop
September 9-10, 2026, Manchester
Invited speaker University of Edinburgh: Susanne van Veluw

EPI in the news

Jinhui Zang visited the Ultrasound lab for 12 weeks from Shanghai Jiao Tong University.

The Society of Nuclear Medicine and Molecular Imagin (SNMMI) selected the publication by Maccioni *et al*., 2026 as a top story of SmartBrief on the 11th February 2026.

PiW-CZI scholarship programme. A record number of applications were received in 2026 for this hands-on scholarship. Candidates from all over the world applied to visit Edinburgh in the summer of 2026 to learn more about PET whole-body kinetic modelling and network analysis. We welcomed Jarrad Perron to the PET group!

As part of Adriana Tavares role as co-chair of the biomedical working group for Global Bioimaging, a facility sustainability hackathon was launched in February 2026: Advancing Sustainability in Biomedical Imaging: Aish Mishra was awarded second place for the Multimodal Preclinical Imaging Facility (MPIF) proposal.

Press releases

LW223 first in human whole-body PET data

https://edinburgh-innovations.ed.ac.uk/news/new-imaging-tool-for-inflammation-proves-suitable-for-human-use

https://www.gla.ac.uk/news/headline_1242354_en.html

Recent publications

Zheng Y, Durcan CB, Thomson A, Gilmour L, Pratibha P, Mulvana H, Chen Y, MacGillivray T, Ingram M, D'hooge J, Moran CM (2026) Acoustic and mechanical characterisation of a 3D-printable transparent vessel mimicking material for pre-clinical imaging comparison with ex-vivo vessels and established clinically relevant materials. Ultrasonics. Under revision.

Kollman C, Jenderka K, Moran CM, Jimenez Diaz JF, Antsaklis P Jenssen C, Andersen C, Ewertsen C (2026) The European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB): Policy statement on live ultrasound scanning. In press.

Nash J, Debono S, Loganath K, Whittington B, Tzolos E, Syed M, Clark L, Mitić, Tavares A, Macaskill M, Sellers SL, Clark T, Semple S, Macnaught G, van Beek EJR, Dey D, Slomka P, Walker N, Madine J, Field M, Akhtar R, Torsythe RO, Williams MC, Dweck MR, Newby DE, Fletcher AJ (2026) Molecular Calcification Imaging and Ascending Aortic Disease in Bicuspid Aortic Valve. JAMA Network Open. DOI: 10.1001/jamanetworkopen.2025.60385.

Reker F, Leimgruber J, Westerway SC, Moran CM, Merz E, Schwarz S, Moller B, Schreiber-Dietrich D, Dietrich CF (2026) Sonopsychology in obstetrics, gynecology, and pediatrics: psychological dimensions of ultrasound practice. Med Ultrason. DOI: 10.11152/mu-4591.

Khaing PH, MacAskill MG, Xiao J, Liu S, Gu Z, Sun X, Xu T, Koglin N, Stephens AW, Newby DE, Guan Y, McErlain H, Sutherland A, Tamagnan GD, Xie F, Tavares AAS (2026) First human whole-body biodistribution and dosimetry analysis of [18F]LW223, a novel TSPO PET radiotracer. Eur J Nucl Med Mol Imaging. DOI: 10.1007/s00259-025-07722-0.

Maccioni L, Knyzeliene A, Alcaide-Corral CJ, Reid VJM, Morgan TEF, Henry MC, Sutherland A, Veronese M, Tavares AAS (2026) Network-Based Analysis for the Quantification of Brain and Body Immune Axes with Total-Body PET Imaging. J Nucl Med. DOI: 10.2967/jnumed.125.271514.

Padgett MJ, Fucelova N, Boltze J, England TJ, Hietamies T, Horsburgh K, Quinn TJ, Sena ES, Work LM, Zille M, Trueman RC, Farr TD (2026) Systematic review and meta-analysis of cognitive assessments used to detect deficits in the bilateral carotid artery stenosis model for vascular cognitive impairment. JCBFM. DOI: 10.1177/0271678X251405670.

Bricout A, Hardman D, Inglis S, Pye S, Pires L, Moran CM (2025) ResNet versus U-net for measurements of imaging performance of ultrasound scanners. Medical Image Understanding and Analysis (MIUA'2025). Frontiers Media SA:17–24

Dietrich CF, Moll JH, Blaivas M, Campbell Westerway S, Dong U, Esposito F, Lucius C, Moran CM, Moller K, Moller B, Jenssen C (2025) Sonopsychology: integrating psychological awareness and patient-centred outcomes into ultrasound practice. Medical Ultrasonography. DOI: 10.11152/mu-4554.

Li C, Li T, Hu M, Kang X, Su X, Wang S, Lu D, Shen S, Huang H, Deng X, Liu Y, Lu Z, Farr TD, Cai W (2025) Novel peri-vascular macrophage mechanism to promote glymphatic amyloid-beta clearance after stroke. Stroke. 56(9): 2695-2706. DOI: 10.1161/STROKEAHA.124.050266.

Recent publications

Réti D, Corral CA, Cranston I, Reid VJM, O'Rourke KM, Morgan TEF, Montagne A, Jansen MA, Burianova VK, Sutherland A, Major P, Nagy K, Bagaméry G, Tavares AAS (2025) Performance evaluation of the nanoScan® P123S total-body PET. EJNMMI Phys. 13(1): 2. DOI: 10.1186/s40658-025-00817-5.

Hellman AF, Clegg PS, Marie S, Tournier N, Tavares AAS (2025) Comparing three methodologies for network analysis of human [11C]glyburide whole-body PET data: d-networks, s-networks, and ΔPCC networks. EJNMMI Res. 16(1): 24. DOI: 10.1186/s13550-025-01348-x.

MacAskill MG, Reid VJM, Alcaide-Corral CJ, Morgan TEF, Waddell L, Thomson AJW, Fujisawa T, Mills NL, Marti JA, Kurian D, Wishart TM, De Albuquerque ACJ, Chui E, Knyzeliene A, Balogh V, Wimberley C, Dweck MR, Newby DE, Lucatelli C, Pimlott SL, Sutherland A, Tavares AAS (2025) Longitudinal [18F]LW223 PET imaging of macrophage-driven inflammation following myocardial infarction in a rat model: implications for left ventricular remodelling. Eur J Nucl Med Mol Imaging. DOI: 10.1007/s00259-025-07691-4.

Waddell LJN, MacAskill MG, McErlain H, Morgan TEF, Williams L, Reid VJM, Beyger A, Pimlott SL, Tavares AAS, Sutherland A (2025) Synthesis and evaluation of enantiomeric quinoline-2-carboxamides: positron emission tomography imaging agents for the translocator protein. RSC Med Chem. DOI: 10.1039/d5md00930h.

Wheeler C, Khaing PH, D'Arnese E, Tavares AAS (2025) Comparison of multi-organ CT image segmentation tools for whole-body [18F]FDG-PET/CT clinical imaging. Eur J Nucl Med Mol Imaging. DOI: 10.1007/s00259-025-07666-5.

Short E, Ajjan R, Barber TM, Bhandari S, Chazot P, Garrison JL, Goyal A, Huckstepp R, Jamal N, Kanamarlapudi V, Lazar A, Lee T, Tavares AAS, Tree JJ, Wellington J, Calimport SR, Bentley B (2025) Pineal gland senescence: an emerging ageing-related pathology? Hormones (Athens). DOI: 10.1007/s42000-025-00720-9.