



A highly innovative system, known as a long axial field of view (LAFOV) PET/CT, has recently become available and is a well-suited medical imaging modality to study diseases and molecular processes at the whole body/systems biology level with multiple radiotracers. Studying diseases and diagnosing patients using PET/CT imaging should use a whole body/systems biology approach to characterize and quantify underlying of disease processes. Ideally, such a characterisation should be longitudinal and should use multiple radiotracers and dedicated image reconstruction methodologies. For LAFOV PET/CT, however, there is a need to develop necessary and adequate tools, methodologies, imaging procedures that scientists can use to effectively develop adequate applications to provide answers to clinical questions. With the **PREFERENCE** project we aim to develop innovative LAFOV PET/CT methodologies to perform and support ground-breaking new clinical research.

PREFERENCE will train the next generation of researchers specialized in LAFOV PET/CT, who will leverage the novel technical capabilities and unprecedented performance of the LAFOV PET/CT system to explore innovative imaging approaches. By performing research in both academia and industrial groups, researchers within **PREFERENCE** receive training in a unique combination of (soft) skills across disciplines and sectors. **PREFERENCE** will develop new LAFOV PET/CT methodologies and perform LAFOV PET/CT clinical studies across disease areas to obtain novel biological insights. This project was selected by the EU for funding under the HE Marie Skłodowska Curie Action. The consortium consists of 12 leading academic partners with extraordinary expertise in quantitative LAFOV PET/CT imaging as well as industrial partners developing imaging equipment or providing multi-center image analysis solutions and services.

PhD PROJECT. Multi-tracer PET Imaging for Holistic Tumour Characterisation



HOST INSTITUTION. Eberhard Karls University Tuebingen (EKUT)

The doctoral candidate will conduct the research within the Department of Nuclear Medicine and Clinical Molecular Imaging at the University Hospital Tübingen and be enrolled in the doctoral programme of the Eberhard Karls University Tübingen, one of Germany's leading research universities and a University of Excellence.

University Hospital Tübingen was the first university hospital in Germany to install a Siemens Biograph Vision Quadra long-axial field-of-view PET/CT system and has extensive expertise in the development of novel methodologies for quantitative Total-Body PET imaging. The imaging infrastructure further includes a clinical PET/MR system, several SPECT/CT systems, a state-of-the-art radiopharmacy and close access to the preclinical facilities of the Werner Siemens Imaging Center.

Tübingen has extensive experience in translating novel PET methodologies into clinical practice and conducting innovative clinical imaging studies with established and emerging PET tracers. Combined with expertise in advanced image analysis, computational PET imaging and on-site radiopharmacy, this provides an exceptional environment for developing and validating new quantitative PET methodologies directly in patients. Research is performed within a highly interdisciplinary team of physicists, computer scientists, engineers, radiochemists and clinicians, offering excellent opportunities for scientific collaboration and international networking.

Tübingen is a historic and vibrant university town with more than 30,000 students among approximately 90,000 inhabitants and is Germany's youngest city by average age. Its international academic community and close links between the university, research institutes, hospital and industry provide an outstanding environment for doctoral training and scientific career development.

DESCRIPTION OF THE ADVERTISED POSITION (DC 10)

This is a 3-year full-time position as a Doctoral Candidate (DC) within the Marie Skłodowska-Curie Doctoral Network PREFERENCE. The successful candidate will join the Total-Body PET Physics Group of Dr. Fabian Schmidt at the Department of Nuclear Medicine and Clinical Molecular Imaging & Werner Siemens Imaging Center at the University Hospital Tübingen and contribute to the development of the next generation of quantitative multi-tracer PET imaging.

While PET has traditionally been performed as a single-tracer imaging modality, many clinical questions require complementary information from multiple radiotracers, necessitating separate examinations on



different days. Leveraging the unique sensitivity of LAFOV PET, this project aims to establish clinically feasible same-session multi-tracer imaging with reduced patient dose, enabling a more holistic characterization of tumour biology including metabolism, receptor expression and immune-related pathways, within a single patient visit.

To achieve this, the doctoral candidate will develop advanced multi-tracer imaging protocols enabled by sophisticated computational methods, combining deformable image registration, AI-assisted denoising strategies, tracer kinetic modelling, CT-free attenuation correction and model-based corrections. The developed methodologies will be validated using clinical total-body PET datasets and applied to complementary PET tracers. The successful candidate will work at the interface of medical image computing, artificial intelligence, quantitative PET imaging and clinical molecular imaging. The project offers outstanding opportunities to develop novel computational imaging methods with direct clinical impact while collaborating closely with physicists, clinicians and leading international research groups within the PREFERENCE consortium.

Within the project, the doctoral candidate will undertake international secondments at King's College London, Université Bretagne Occidentale and the German Cancer Research Center (DKFZ). These secondments will provide advanced training in multi-tracer PET imaging, theragnostic imaging and dosimetry, as well as multiparametric analysis of dynamic PET data for tumour characterization. In addition, the candidate will participate in the structured scientific and transferable-skills programme of the Marie Skłodowska-Curie Doctoral Network, including international mentoring and exposure to both academic and industrial research environments.

GENERAL ELIGIBILITY CRITERIA

Mobility Rule: The fellow may not have resided in the country where the research training activities take place for more than 12 months in the 3 years immediately prior to the recruitment date (and not have carried out their main activity (work, studies, etc.) in that country)

Doctoral candidate: The fellow must be — at the date of recruitment — an ‘**doctoral candidate**’ (i.e. not have a doctoral degree).

Candidates from Russia, Belarus and occupied territories in Ukraine are also not eligible.

SPECIAL REQUIREMENTS

- MSc degree in Physics, Biomedical Engineering, Computer Science, Medical Image Computing, Artificial Intelligence or a related discipline
- Very good command of the English language
- Good communication skills (a pre-requisite for cooperating in a multi-disciplinary environment)
- Willingness to travel and flexibility
- Prior experience with medical imaging data will be of benefit

RECRUITMENT PROCESS:

After assessing compliance with the mobility rule and eligibility for the position based on your CV and motivation letter you might be invited for several online or in-person interviews. Selection of the candidates and invitation for the interviews will be done by the local (host) supervisory team. These interviews will be performed by the local (host) supervisory team as well as an international scientific mentor from the network and, possibly, one of the scientific advisors. Information on your application will be shared with the coordinator of the consortium for centralized coordination and registration of the recruitment process. Information on the exact employment conditions will be provided by the host institution and can also be found on their job announcement board, information on salary (gross and net

salary, social security benefits etc) will be communicated during the interview and upon appointment by the host institution.

You will be appointed as fulltime PhD candidate for 3 years. Successful candidates will receive a salary in accordance with the Marie Skłodowska-Curie Actions, that includes a gross living allowance of €4.050/month, a monthly mobility allowance of €710 and depending on your familiar status, a family monthly allowance of €660. Please note that these amounts include taxes and compulsory employer contributions that will be deducted to make the net salary. The exact net salary will be confirmed upon appointment.

FURTHER INFORMATION:

PREFERENCE: <https://preference-consortium.eu/>

University Hospital Tuebingen: <https://www.medizin.uni-tuebingen.de/en-de/>

Full applications should include

- A motivation letter
- A Europass CV (<https://europass.cedefop.europa.eu/documents/curriculum-vitae>)
- Copies of your relevant certificates
- Contact details of two references

Applications should be submitted online to: preference@amsterdamumc.nl by 1 October 2026. In case of any procedural questions, please contact: preference@amsterdamumc.nl