Marie Skłodowska-Curie ITN-ETN. PhD position no. 12. PET3D-PhD programme in PET IMAGING IN DRUG DISCOVERY AND DEVELOPMENT

One position is available at University of Münster (WWU) within H2020 MSC ITN-ETN PET3D. Research project 12 “Multimodal two-photon microscopy and PET/MR imaging of glioma growth & angiogenesis”: Gliomas constitute the 2nd most common cause of death from intracranial disease after stroke (PLoS One. 2013, 8, e67911). Gliomas are dynamic heterogeneous tumor tissues consisting of tumor cells with uncontrolled proliferation inducing angiogenesis and escaping the host immune response. To investigate alterations of tumor cell growth, vasculature and immune system caused by glioma growth as well as the changes induced by anti-angiogenic or combination treatment we will employ intravital 2-photon microscopy (2PM) in combination with PET/MR imaging in a mouse model of glioma. Particular emphasis will be put on the correlation of the dynamic imaging data with post mortem histopathological analysis. Our long-term goal is to decipher factors, which guide the response to anti-proliferative or anti-vascular therapy versus tumor escape mechanisms with changes into a migratory phenotype. Analytic parameters will focus on dynamic changes of various tumor parameters including: vascular volume and branching, blood flow velocity and BBB integrity (2PM) - amino acid metabolism ([18F]FET); glioma cell proliferation ([18F]FLT); glioma cell migration ([18F]BR351); induction of hypoxia [18F]HX4; microglia activation ([18F]DPA-714); (μPET/CT) - vessel size and perfusion (μMRI) - target-specific optical contrast agents for endothelial markers of angiogenesis (e.g. ETA1) - comparative immunostaining employing endothelial markers (Cd31, LAT1), proliferation (Ki67) and extracellular matrix (MMP-2/-9). This project aims to decipher various stages of glioma growth and phenotypes before and during therapy by multi-modal imaging to possible understand types of treatment response and escape mechanisms in vivo.

Job Description
Marie Skłodowska-Curie ITN-ETN PET3D-programme in “PET imaging in Drug Design and Development” comprises a total of 15 cutting edge research projects in three main therapeutic areas of oncology, cardiovascular and central nervous system at eight beneficiary institutions, providing research and training in the field of drug design and health. Leading experts in medicinal and organic chemistry, peptide and protein chemistry, radio-chemistry, pharmacology, cell and pre-clinical biology, molecular imaging, image analysis, and radiology are involved in PET3D. This expertise will be combined to train the next generation of molecular imaging experts. 6 academic and 2 non-academic beneficiaries will provide this unique training opportunity that will transfer key multidisciplinary and industry-relevant skills to 15 ESRs. Beneficiaries: UK - University of Aberdeen UK - Coordinating University- (Graduate School in Life Sciences and Medicine); The Netherlands - Stichting VU-VUMC; Belgium - Vrije Universiteit Brussel; Spain - Asociación – CIC biomaGUNE; Germany - Westfaelische Wilhelms-Universitaet Muenster;UK – Imanova Limited; Sweden - AstraZeneca plc.

PET3D AIM: PET imaging will be used to revolutionize drug design and development by providing reliable answers at a much earlier stage of drug development to key questions emerging during the disease care cycle, thus facilitating effective transition from pre-clinical to clinical phase in drug development.
Each ESR will be exposed to a variety of highly complementary research environments and spend at least one secondment in a different country and will attend training events and consortium meetings in all of the 7 countries involved in PET3D. Training activities provided: cutting edge research training, technical training, generic skills training; cross-sectorial training – translational skills training, commercialisation; access to state of the art technologies in each of the beneficiary sites; transferrable and generic skills training – communications, presentation, writing, management, dissemination, intellectual property rights protection, dissemination and exploitation, ethical issues, entrepreneurial initiatives, CV writing and interview training available locally at each beneficiary site.

**Main Research Fields:** Biological Sciences, Medical Sciences  
**Career Stage:** Early stage researcher or 0-4 yrs (Post graduate)  
**Research Profiles:** First Stage Researcher (R1)  
**Benefits:** PhD students will receive a 36-month grant to cover his/her participation costs, living, travel and installation allowance, family allowance (http://www.abdn.ac.uk/pet3d/recruitment/esr-grant)  
**Comment/web site for additional job details:** [www.abdn.ac.uk/pet3d](http://www.abdn.ac.uk/pet3d)  

**EU Research Framework Programme**  
**Is the job funded through the EU Research Framework Programme:** H2020/Marie Curie Actions  
**Project’s Marie Curie Grant Agreement Number:** H2020-MSCA-ITN-2015, proposal 675417 — PET3D  
**Advert Number:** 11863-12  

**Job Details**  
**Type of Contract:** Temporary (36 months)  
**Status:** Part-time (65% of full time)  
**Working Hours (hours per week or free text):** 65% of 38.5  
**Company_Institute:** University of Münster  
**Country:** Germany  
**Community Language:** English/German  
**State/Province:** Germany  
**City:** Münster  
**Postal Code:** 48149  
**Street:** Schlossplatz 2-4  

**Organisation_Institute Contact Data**  
**Organisation:** University of Münster  
**Organisation_Institution Type:** Public Research  
**Faculty/Department/Research Lab:** European Institute for Molecular Imaging (EIMI)  
**Country:** DE  
**City:** Münster  
**State/Province:** Northrhein-Westfalen  
**Postal Code:** 48149  
**Street:** Waldeyerstr. 15  
**E-Mail:** zinnhardt@uni-muenster.de
Application Details
Envisaged Job Starting Date: 04/2017
Application Deadline: 15/02/2017
How to Apply: applicants are asked to send their application with reference number (11863-12) including cover letter, CV and a supporting letter of their academic supervisor.
Application e-mail: inmind@uni-muenster.de

Required Education Level
Degree: Master Degree or equivalent
Degree Field: Biological Sciences/Medical Sciences or similar

Required Language
Language: English
Language Level: Good – very good

Additional Requirements:

Skills:
• a Master of Science (Biology, Biomedical Sciences) or similar degree
• strong interest in non-invasive imaging modalities (PET, SPECT, MRI)
• experience with neuroinflammation/glial biology is a plus
• experience with lab rodents/FELASA is considered a plus
• the candidates should have excellent analytical skills, good command of written and spoken English and should be able to work in a team as well as independently.

Specific Requirements:

Desired Qualifications:
• Career profile and potential for excellence
• Ability and motivation to work independently as well as collaboratively in an interdisciplinary team
• Exceptional communicative and intercultural skills
• Willingness for significant mobility throughout Europe (Secondment: 6 months at Astra Zeneka, Sweden) and stakeholder interactions

The main responsibilities of the candidate will be:
• To manage and carry out an independent research project in close collaboration with partners in PET3D
• To develop and test innovative imaging protocols for preclinical neuroimaging with and without pharmacological intervention
• To actively participate in research and training activities within the PET3D network
• To publish their results in international peer-reviewed journals
• To disseminate research results in the scientific community (via international conferences) and in the non-scientific community (via outreach and public engagement)
• To complete a PhD thesis