Applications are invited for the following ERC Starting Grant funded research position:

PhD Position in Vascular MRI Imaging and Biomechanics for Carotid Disease Diagnosis

Project Description: The aim of the research project is to develop a means of identifying alterations in collagen fibre architecture in carotid arteries in vivo using non-invasive imaging techniques, namely MRI. This technique will be used as a means of early diagnosis of carotid artery disease diagnosis, and in particular to identify carotid plaques at risk of rupture.

Diffusion Tensor MRI (DT-MRI) can be used to track fibre tracts and to-date it has been predominantly developed and applied to mapping fibres in the brain. Prof Lally’s group, have recently demonstrated the feasibility of using DT-MRI to characterise collagen fibre patterns in ex vivo porcine arteries and this project will explore the means by which this technique can be enhanced and adapted for use in human tissue in vivo. Potential applications of the brain fibre tracking NODDI (neurite orientation dispersion and density imaging) model to arterial tissue will also be explored.

Candidates should have a high (1st or 2.1) Masters/Bachelors degree in biomedical imaging, bioengineering, computer science, electronic engineering or a related discipline with specific expertise in medical imaging, computer programming (e.g. Matlab) and/or arterial tissue characterisation.

The Lally Lab: Prof. Caitríona Lally leads a multidisciplinary research group in the School of Engineering in Trinity College Dublin and is a Principal Investigator within the Trinity Centre for Bioengineering (TCBE). The aim of her work is to develop innovative means of diagnosing and treating cardiovascular diseases through the integration of arterial biomechanics and vascular biology.

The successful applicant will work within a multidisciplinary project team including PIs, postdoctoral fellows and postgraduate researchers in Prof. Lally’s group and the Trinity Centre for Bioengineering (http://www.tcd.ie/bioengineering/) in Trinity College Dublin, the Trinity College Institute of Neuroscience, and St. James’s Hospital Dublin.

The Lally Lab Webpage: http://www.mee.tcd.ie/biomaterials/People/CLally

Start date: From Oct 2016 - available immediately but position will remain open until a suitable candidate is found.

Application process: Please e-mail your CV (including the names and contact details of 3 referees) to lallyca@tcd.ie with the subject heading “Vascular Imaging PhD”