University of Edinburgh

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Tasks to develop during the TFM:
Transgenic mouse colony management, early embryo dissections (day 6-8 of development); Genomic DNA + RNA isolation, PCR genotyping, qPCR analysis; In situ hybridization and immunostaining, clearing of tissues for imaging, gelatin and parafin tissue embedding, cryosection and whole-mount preparations; Confocal and light-sheet microscopy; Staining and sample preparation for flow cytometry analysis; Figure-making and lab meeting presentations.

Required student skill:
Required: Motivated, hard-working, willing to learn new lab techniques and open to collaboration. Bachelor in Biology, Biochemistry, Biotechnology or related disciplines. Professional proficiency in English. Desired: Knowledge of image analysis applications such as Fiji/ImageJ or similar. Capable of reading and understanding scientific articles.

If interested please send a 1 page CV with relevant scientific details (including contact details of at least 1 reference) and a brief personal statement about your motivations to come to our lab to a.binagui-casas@ed.ac.uk

Abstract of the project (250 words maximum):
Val Wilson’s lab is world-leading in mouse embryology with strong expertise in lineage and potency mapping in ex-vivo embryo cultures (Wymeersch FJ 2019, Wymeersch FJ 2016, Huang Y 2015, Tzouanacou E 2009, Cambray N 2007, Wilson V 1996). Our primary objective is to understand how mesodermal progenitors produce different derivatives during embryogenesis. The specific aim for this project will be to track the onset of vasculogenesis. We want to study how a particular group of mesoderm-derived progenitors make the very first endothelial progenitors that emerge in the mouse embryo and how these endothelial cells converge into forming the dorsal aorta (the first major vessel in the body of the embryo, which also harbours haematopoietic stem cell potential). To achieve this, we will be using our own transgenic endothelia-specific mouse line coupled to imaging and gene expression analysis, contributing to the understanding on the key cellular and molecular events of intra-embryonic blood vessel formation.