

Project proposal

<i>Project title</i>	Systematic investigation of the SPARC family of matricellular proteins in diabetes and cancer	
<i>First Supervisor</i>	Dr <input type="text" value=""/>	<input type="text" value="Natasha Hill"/>
<i>Second Supervisor</i>	<input type="text" value="Dr Lucy Jones"/>	
<i>School</i>	<input type="text" value="Life Sciences"/>	
<i>Other member of supervisory team (no more than three KU supervisors in total)</i>	<input type="text" value="Dr JC Nebel"/>	
<i>Specific requirements beyond 2:1 degree</i>	<input type="text" value=""/>	

Project summary (max 4,000 characters)

The SPARC family are secreted proteins present in the extracellular matrix and are likely to play an important role in the way cells perceive and respond to their environment, for example in the regulation of critical cellular pathways such as cell proliferation and migration. These processes are central to both regenerative medicine and cancer. However, very little is currently known about the function of the wider SPARC family of proteins or, importantly, how the functions of these proteins may intersect. The goal of this project is to use cell and molecular biology approaches to systematically examine the function of the wider SPARC family in the regulation of cell proliferation and migration, combined with a bioinformatics approach to analysing the expression of variants of these proteins. This work will have important implications for a number of disorders, and will focus on the relevance for either β cell regeneration for diabetes therapy or on pancreatic cancer, depending on the interest of the student.

The project will involve the use of a range of techniques, including cell isolation and culture, siRNA knockdown, western blotting and confocal microscopy.