



<b>Position Title</b>	PhD Studentship – Mechanotransducing Magnetic Biomaterials
<b>Project Abstract</b>	<p>By directly targeting cell-surface mechanosensors and transducing forces from an external magnetic field to remotely control mechanotransduction, the study will assess the ability of these magnetic biomaterials to facilitate bone regeneration following osteoporotic bone loss or to heal a critical sized defect.</p> <p>This exciting technique offers a potential non-invasive, anabolic therapy, however, the technology has clinical applications far beyond the skeletal system proposed here.</p> <p>Magnetic nanoparticles offer an innovative way of mechanically stimulating cells both in-vitro and in-vivo. Superparamagnetic iron oxide nanoparticles (SPIONs) have a magnetic particle core which is surrounded by a biocompatible polymer. In this study, SPIONs will be functionalised to attach to a number of cell receptors which have been identified for their role in bone turnover and where mechanical loading is a requirement for initiating the signalling pathway.</p>
<b>Experience</b>	The PhD position is funded for 4 years, including a monthly stipend and materials and travel budget. Applicants should hold a minimum of an honours bachelor's degree at 2:1 level or equivalent in a relevant subject such as Biomedical Science/Physics. Candidates should also have a strong interest in magnetism and regenerative medicine.
<b>Funding</b>	The studentship will cover fees up to €5,500 pa and a stipend of €18,500 pa
<b>Location</b>	RCSI
<b>Closing Date</b>	Friday 29 <sup>th</sup> June 2018
<b>For more information contact</b>	Dr. Orlaith Brennan; <a href="mailto:obrennan1@rcsi.ie">obrennan1@rcsi.ie</a> ; 01-402-2375

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