Orla McGee Bio
Orla is currently undertaking her PhD studies in the National University of Ireland Galway. Her research focuses on self-expanding nitinol Transcatheter Aortic Hearts Valves (TAVs) and the tissue-stent interaction between the nitinol valve frame and the stenosed aortic root. Orla combines computational modelling and experimental techniques to investigate the role of calcification on the tissue-stent interaction for TAVs.

Quantification of the effect of Calcification on the tissue-stent interaction in a stenosed aortic root
Transcatheter Aortic Valve Implantation (TAVI) is a minimally invasive alternative to open heart surgery in the treatment of aortic stenosis. TAVs are mounted onto a collapsible valve stent and delivered to the stenotic valve in a crimped configuration via a catheter. Unlike surgical valves TAVs are not sutured into place. Thus, the tissue-stent interaction has a great impact on the successful deployment and post-operative device performance. It has previously been shown that excessive radial force can lead to aortic root rupture, whereas inadequate radial force can lead to problems such as migration of the stent into the left ventricle, but interaction between the TAV and the calcified native valve is not yet fully understood. In this study we present a combined in vitro calcified aortic root model and computational modelling approach to investigate the tissue-stent interaction for a calcified aortic valve.