

NUI Galway biomedical engineers claim top national awards

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NUI Galway PhD biomedical engineering students David Nolan and Fiona Freeman recently claimed two major national awards for their research, including the Engineers Ireland Biomedical Research Medal

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NUI Galway biomedical-engineering researchers recently claimed two major national awards. David Nolan, a PhD student in biomedical engineering under the supervision of Dr Patrick McGarry at the College of Engineering and Informatics, is the 2015 winner of the prestigious Engineers Ireland Biomedical Research Medal, awarded annually to the best PhD-level biomedical engineering research in Ireland.



This prestigious award and a €1,000 honorarium is sponsored by DePuy Synthes and is adjudicated, based on a research paper and presentation, by an expert panel drawn from academia and industry.

Nolan's winning paper entails the development of new mathematical and computer models for simulating arteries based on experimental testing of excised arterial tissue. The mechanical behaviour of arteries is particularly complex due to the presence of aligned reinforcing collagen fibres. This new formulation provides improved predictions of the stress state in arteries during the insertion of stents. This research has significant implications for the design of next-generation medical devices.

This is the second time that a member of Dr McGarry's research group has achieved this award in the past four years. The research was performed in collaboration with Prof Michel Destrade and Artur Gower, School of Mathematics, Statistics and Applied Mathematics at NUI Galway, and Prof Ray Ogden, School of Mathematics and Statistics, University of Glasgow. The research is funded by Science Foundation Ireland and the Irish Research Council, and is also supported by the Irish Centre for High-End Computing.

A major research award was also recently claimed by Fiona Freeman, a biomedical engineering PhD student under the supervision of Dr Laoise McNamara, also from the College of Engineering and Informatics, NUI Galway. Fiona was awarded first prize in the Mature Researcher category for her presentation at the 21st Annual Conference of the Bioengineering Section of the Royal Academy of Medicine in Ireland.

The work presented at the conference was conducted by Freeman in Prof Robert Guldberg's Laboratory in Georgia Tech, Atlanta. After being awarded the National University of Ireland Travelling Scholar Award, Fiona travelled to the US for six months to conduct her studies in collaboration with Guldberg's laboratory. Her study explored the fate of constructs produced using an endochondral ossification process.

Both Nolan, a native of Kilkenny, and Freeman, a native of Galway, completed their undergraduate degrees in biomedical engineering at NUI Galway prior to undertaking PhD research.

Speaking of their success, Prof Gerry Lyons, Dean of Engineering and Informatics at NUI Galway said: "David's and Fiona's awards further establish NUI Galway as a leading centre for biomedical engineering research, both nationally and internationally. This research is also very important for the ongoing development of the medical device industry."