

## Paul Fahy CV: List of Publications

Link to my Research Gate profile: [Paul Fahy | ResearchGate](#)

**Area of interest: Manufacturing Engineering, Additive Manufacturing, Biomedical Engineering, Medical Imaging, Cerebral haemodynamics, Acute ischemic stroke, Cerebral Aneurysms**

### **Position: Lecturer Dept. of Mechanical & Industrial Engineering GMT**

Dr. Fahy is currently lecturing in the department of Mechanical Engineering and Team Leader in the MET research centre. Dr. Fahy has completed a PhD in biomedical engineering in designing and developing customized physiological simulators of the cardiovascular system. He has extensive expertise in motion control, vision systems and a vast knowledge of materials and manufacturing techniques in fabricating complex phantom models of the human anatomy.

He has published in a number of high ranking peer reviewed scientific journals articles and presented at both national and international conferences. He was principle investigator (PI) on two academic research projects shortlisted on separate occasions by the Irish Medical Device Award (IMDA) in collaboration with Cerenovus (formerly Neuravi) and UHG. Dr. Fahy also provided bench marking data for an international study involving over 25 research groups worldwide to assess the variability of computational fluid dynamic modelling in cerebral aneurysm (ASME 2012). Dr. Fahy is an active member of the Bioengineering research in Ireland (BINI) and is currently lecturing in the area of manufacturing engineering and has keen interest in additive manufacturing technologies.

### **Contact details:**

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### **Peer Reviewed Publications:**

- Elhelali, A., Hynes, N., Morris, L., Delassus, P., Kavanagh, E. P., Stefanov, F., Fahy, P., & Sultan, S. (2020). Open surgical repair vs. hybrid repair for treatment of aortic arch aneurysm: a systematic review and meta-analysis. In *Italian Journal of Vascular and Endovascular Surgery* (Vol. 27, Issue 3). <https://doi.org/10.23736/S1824-4777.20.01443-6>
- Elhelali, A., Sultan, S., Hynes, N., Delassus, P., Kavanagh, E. P., Fahy, P., Stefanov, F., & Morris, L. (2020). Evaluation of aortic arch aneurysms treated with the streamliner multilayer flow modulator. *Italian Journal of Vascular and Endovascular Surgery*, 27(3). <https://doi.org/10.23736/S1824-4777.20.01444-8>
- Fahy, P., Delassus, P., McCarthy, P., Sultan, S., Hynes, N., & Morris, L. (2014). An in vitro assessment of the cerebral hemodynamics through three patient specific circle of willis geometries. *Journal of Biomechanical Engineering*, 136(1). <https://doi.org/10.1115/1.4025778>
- Fahy, P., Delassus, P., O'Flynn, P., & Morris, L. (2011). An experimental study of the effects anatomical variations have on collateral flows within the circle of Willis. *ASME 2011 Summer Bioengineering Conference, SBC 2011, PARTS A AND B*. <https://doi.org/10.1115/SBC2011-53723>
- Fahy, P., Malone, F., McCarthy, E., McCarthy, P., Thornton, J., Brennan, P., O'Hare, A., Looby, S., Sultan, S., Hynes, N., & Morris, L. (2015). An In Vitro Evaluation of Emboli Trajectories Within a Three-Dimensional Physical Model of the Circle of Willis Under Cerebral Blood Flow Conditions. *Annals of Biomedical Engineering*, 43(9). <https://doi.org/10.1007/s10439-015-1250-6>
- Fahy, P., McCarthy, P., Sultan, S., Hynes, N., Delassus, P., & Morris, L. (2014). An experimental

investigation of the hemodynamic variations due to aplastic vessels within three-dimensional phantom models of the circle of willis. *Annals of Biomedical Engineering*, 42(1).

<https://doi.org/10.1007/s10439-013-0905-4>

- Malone, F., McCarthy, E., Delassus, P., Fahy, P., Kennedy, J., Fagan, A. J., & Morris, L. (2018). The Mechanical Characterisation of Bovine Embolus Analogues Under Various Loading Conditions. *Cardiovascular Engineering and Technology*, 9(3). <https://doi.org/10.1007/s13239-018-0352-3>
- Morris, L., Fahy, P., Stefanov, F., & Finn, R. (2015). The Effects That Cardiac Motion has on Coronary Hemodynamics and Catheter Trackability Forces for the Treatment of Coronary Artery Disease: An In Vitro Assessment. *Cardiovascular Engineering and Technology*, 6(4). <https://doi.org/10.1007/s13239-015-0241-y>
- Steinman, D. A., Hoi, Y., Fahy, P., Morris, L., Walsh, M., Aristokleous, N., Anayiotos, A. S., Papaharilaou, Y., Arzani, A., Shadden, S., Berg, P., Janiga, G., Bols, J., Segers, P., Bressloff, N., Cibis, M., Gijssen, F., Cito, S., Pallares, J., ... Sherwin, S. J. (2013). Variability of CFD Solutions for Pressure and Flow in a Giant Aneurysm: The SBC2012 CFD Challenge. *Journal of Biomechanical Engineering*, 1(1). <https://doi.org/10.1115/1.4023382>
- Steinman, D. A., Hoi, Y., Fahy, P., Morris, L., Walsh, M. T., Aristokleous, N., Anayiotos, A. S., Papaharilaou, Y., Arzani, A., Shadden, S. C., Berg, P., Janiga, G., Bols, J., Segers, P., Bressloff, N. W., Cibis, M., Gijssen, F. H., Cito, S., Pallarés, J., ... Loth, F. (2013). Variability of computational fluid dynamics solutions for pressure and flow in a giant aneurysm: the ASME 2012 Summer Bioengineering Conference CFD Challenge. *Journal of Biomechanical Engineering*, 135(2), 021016. <http://www.ncbi.nlm.nih.gov/pubmed/23445061>

### **Other Publications /Exhibitions/Shows:**

#### **Presented International Conferences**

Paul Fahy, Patrick Delassus , Peter McCarthy, Sherif Sultan , Niamh Hynes, Liam Morris., An Experimental Evaluation of Blood Clot Dynamics within the Circle of Willis under Pulsatile Flow Conditions., European Society of Biomechanics, Patra, Greece, August 25 - 29, 2013

Fahy, P, Delassus P, Walsh M, Morris L “CFD Challenge: Experimental benchmarking data for the pressure drop across a cerebral aneurysm model” ASME Summer Biomedical Engineering Conference - CFD Challenge Workshop, Fajardo, Puerto Rico, 20 – 23 June 2012

Fahy, P, Delassus P, O’Flynn P, Morris L “An Experimental Study of the Effects Anatomical Variations have on Collateral Flows Within the Circle of Willis” ASME Summer Biomedical Engineering Conference, Farmington USA 22 – 25 June, 2011

Fahy, P, Delassus P, O’Flynn P, Morris L “The Effects Anatomical Variations have on Collateral Flows Within a realistic the Circle of Willis model” Biomedical Engineering Society (BMES) Annual Meeting Washington State convention centre, 25- 28 Sept, 2011

#### **Presented National Conferences**

Fahy P, Delassus P, McCarthy P, Sultan S, Niamh Hynes, Morris L. “The influence anatomical variations in the Circle of Willis have on collateral blood flow” Proceeding in 18th annual conference of the Sections of Bioengineering of the Royal Academy of Medicine in Ireland, hosted by Queens University, Hilton Hotel, Templepatrick 27th – 28th January 2012. P. 40.

Fahy P, Delassus P, Morris L. “Anatomical variations in the circle of Willis and the effects on collateral flows” Proceeding in 16th annual conference of the Sections of Bioengineering of the Royal Academy

of Medicine in Ireland. held by trinity College Dublin, at Malahide Hotel, Dublin, January 27th – 28th, 2010

Fahy P, Delassus P & Morris L "Generation of In vitro vascular models " Summer Bioengineering Conference in California, organised by the American Society of Mechanical Engineers USA 17th-21st June 2009

Fahy P, McGloughlin T, Delassus P, Morris L, “Cerebral Aneurysm Model Fabrication”, Bioengineering In Ireland 15th Conference, , Castlelroy Park Hotel, Limerick, January 30-31, 2009

Fahy P, McGloughlin T, Delassus P and Morris, L. “An investigation into testing different occlusion techniques for intracranial aneurysms”. Proceedings of Bioengineering in Ireland 14th, Annual Conference Sligo, p8, 25th & 26th Jan 2008