

Adopting Responsible Innovation to Accelerate Your Route to Impact

Case study – Reaching across disciplines to
accelerate research to the clinic

**EPSRC Impact Acceleration
Account 2020-2022**



**WORLD
CHANGING
GLASGOW**



Engineering and
Physical Sciences
Research Council

IAA Strategic Aim

To increase the global impact of the University through greater levels of external engagement and entrepreneurship

- Deliver this by building on previous IAA investments, and a focus on 4 core objectives:
 - Networking & Relationship Building
 - Funding Mechanisms
 - People Support
 - Training
- Funding awarded - £1.13m



Spotlight on engaging with stakeholders

- A stakeholder is a key individual or a group who is/are impacted by the project and/or are critical to the project's success.
- Engaging externally with a wide variety of stakeholders is key to putting responsible innovation into practice.
- You may already know of and interact with stakeholders within your research networks. However, if you are looking to expand your network or to move into new areas, you will need to identify stakeholders.
- The short introductory video highlights the innovation ecosystem as a good starting point. Reaching out to individuals within this space, for example, individuals in the innovation centres may help you establish connections.
- We have also outlined three case studies of colleagues within the University who have used IAA funding to help them interact with stakeholders.
- The Impact Acceleration Account team and individuals within Research and Innovation Services at the University are also a great resource and should be at the top of your list!

Case study – Reaching across disciplines to accelerate research to the clinic

SofT Mech 

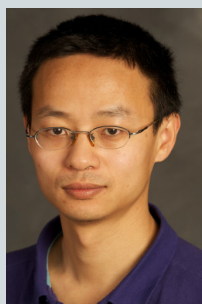
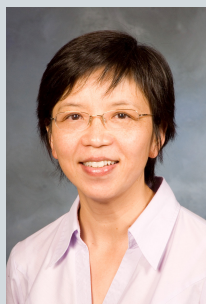


<http://www.softmech.org>

SofT Mech is a multidisciplinary group comprising mathematicians, statisticians and NHS clinicians from multiple centres in Scotland.

This case study is a fantastic example of how differential stakeholder engagement supports and accelerates academic research to the clinic.

The team featured here (see below) had two previous IAA awards for projects centred around mathematical modelling of the heart, and were well placed to quickly answer the call for emerging scientific and clinical information to respond to the Covid 19 Pandemic. Therefore, a third IAA award was granted for the investigation of cardiac injury in relation to COVID-19.



The investigators (L-R): Professor Xiaoyu Luo, Professor Dirk Husmeier, Professor Nick Hill, Doctor Huo Gao, all from Mathematics and Statistics at the University of Glasgow and Professor Colin Berry and Doctor Kenneth Mangoin from NHSGGC.

IAA project story - Cardiac endotypes in COVID-19: quantification and mechanisms of cardiac injury



Professor Luo

“ So, the **question** is - at the beginning there were tons of COVID 19 patients and almost a quarter of them developed heart problems. So why is that? Our **hypothesis** is the Covid19 is causing microvascular dysfunction. ”

To find out, the team turned to MRI imaging, a standard method used by cardiologists to view and diagnose damage to the cardiovascular system. **However...**



Professor Husmeier

“ We've seen that the magnetic resonance images alone are not sufficient to identify COVID19. We want to investigate if in combination with the cardio-mechanic model we can then get a reliable classifier and get deeper insight into the cardio physiology of COVID-19 in comparison with standard heart attack. ”



Professor Hill

“ The IAA project will provide my research group with essential data to inform, test and develop our coronary blood flow computer programmes, and with those to predict what's happening in the smallest blood vessels of the heart in the COVID-19 patients. Which hopefully should allow us to develop further biomarkers to understand the progress of disease and the presence of disease. ”

The patient imaging data is part of the of the CISCO19 clinical study, led by Professor Colin Berry - a cardiac consultant at the NHS. This is a significant clinical study funded by the Chief Scientist Office and involves three hospitals, the Queen Elizabeth University Hospital, the Royal Infirmary and the Royal Alexandra hospitals.



Dr Andrew Morrow

“ We hope to be able to put this all together and create a model that's showing whether or not it is all down to the big arteries or what we suspect, which is that actually some of the areas of perfusion will be due to problems with small arteries and microcirculation. And we hope with all this hard work from ourselves and mathematics colleagues will help us identify something that we should target in the treatment for both the short term and potentially for Long COVID as well if we can understand the mechanism a bit better. ”

Contact the IAA team



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