



HRI Summer Scholarship Research Projects 2021

Cardiovascular Medical Devices

Dr Anna Waterhouse

This Group focuses on how medical devices – such as artificial hearts, stents and bypass machines – interact with the body. This team applies cutting-edge bioengineering tools to develop new methodologies to assess and understand the interplay of events at the biointerface, where the devices interact with the patient, and manipulate this interplay to improve medical device function, create novel medical devices and diagnostics, and both drug and non-drug based avenues for therapies.

- Project: Biomimetic in vitro models for cardiovascular applications

Cardiovascular-protective Signalling and Drug Discovery

Dr Xuyu Liu

This Group aims to develop chemoproteomic platforms to: (1) enable genome-wide understanding of how cardiovascular drugs perform in the context of genetic and disease complications, and (2) provide clinicians with chemical-genetic information to guide personalised medicine for cardiovascular disease treatment.

- Project 1: Application of chemoproteomics platforms to profile kinase signalling in platelets and cardiomyocytes
- Project 2: Rational design and synthesis of novel cardioprotective agents
- Project 3: Towards the development of more effective and safer high-affinity ACE2 variants for the treatment of COVID-19

Haematology Research

Dr Freda Passam

This Group aims to discover novel pathways in blood clotting that can lead to the development of effective and safe drugs to treat thrombosis. Current projects focus on understanding the role of platelet receptors and clotting proteins in thrombotic and bleeding disorders.

- Project 1: Defining the diabetic platelet-ome



Note: The Summer Scholarship program may be cancelled at any time if travel restrictions or health regulations require it.