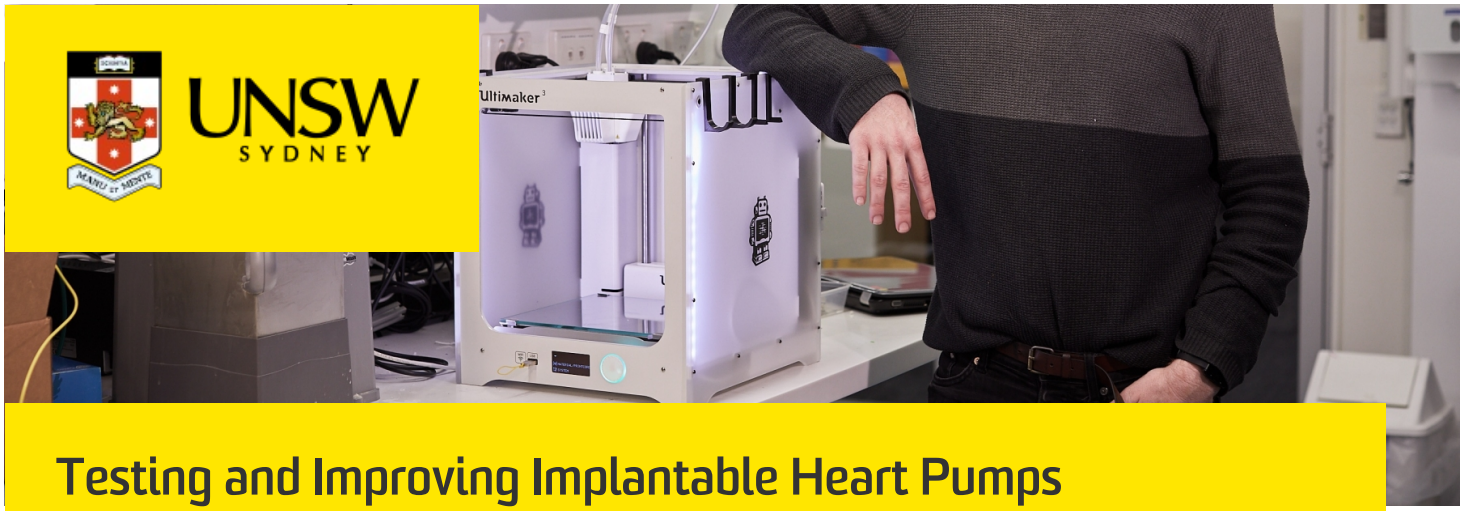

Testing and Improving Implantable Heart Pumps

Developing algorithms to automatically adjust heart pumps to respond to changes in patient state.

Competitive advantage

- Realistic bench top testing rig that simulates a range of cardiovascular conditions
- Ability and skills to test LVADs, RVADs and Total Artificial Hearts
- Able to apply automatic speed variation strategies to the devices

Impact

- LVAD implants are growing exponentially, however they still rely on clinicians to adjust the pump speed. As a result, events like sneezing, coughing, exercise and postural changes will lead to hazardous events like ventricular suction or venous congestion, adding further complication. Automatic physiological control systems for LVADs can reduce the likelihood of these events.

Successful outcomes

- Successfully tested in over 600 different simulated patient scenarios in-silico and in-vitro.

Capabilities and facilities

- Capability for testing and evaluating implantable heart pumps using simulation and bench top testing rigs
- Technology can be deployed with the right commercial partner
- Testing equipment can be utilised to independently verify LVAD performance

Our partners

- BiVACOR
- St Vincents Hospital

More Information

Dr Michael Stevens

Graduate School of Biomedical Engineering

T: +61 2 9385 3912
E: michael.stevens@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61 (2) 9385 5008