Roadmap

# Background

Cardiovascular diseases (CVD) are attributed as the leading cause of death throughout the developed world, accounting for 29% of all deaths in Australia in 2014. CVD often leads to heart failure (HF) and evidence from current literature suggests that HF is the fastest growing CVD globally. The use of mechanical circulatory support (MCS) in the management of acute and chronic HF is continuously expanding with more than 20k devices implanted worldwide by 2016. However, the research field of MCS consists of researchers from multiple international research laboratories and universities spread around the globe and research is often undertaken in isolation within each laboratory, limiting inter-laboratory collaboration and thus the full potential of the field of MCS.

It has been reported that currently an estimated 85% of all global research resources are wasted due to false and non-reproducible results or slow and potentially inefficient translation of knowledge into useful applications. Risk factors for high rates of false results are: flexibility in study designs, definitions and analyses and a lack of collaboration between researchers. Adoption of large-scale collaborative research with a strong replication culture has been shown to be successful in several biomedical fields (e.g. genetic and molecular epidemiology). Sharing of data, protocols, materials and other resources has been promoted in other fields, creating a foundation for reproducible research practices. It has also been shown that improvements in study design standards can improve the reliability of research results, while improved training and continuing education of researchers is also important. There is a clear need and untapped potential for improved collaborative efforts and subsequent improvement of research quality and outcomes within the field of MCS.

# Project Mission & Summary

The OpenHeart Project is an open-source research project which aims to improve research practices within the field of MCS and ultimately improve outcomes and quality of life for heart failure patients around the globe. Key objectives of the OpenHeart Project are:

* Improved collaboration and standardization
* Improved education
* Development of new and improved solutions for mechanical circulatory support

To promote improved collaboration and standardization between researchers and laboratories within the field of Mechanical Circulatory Support (MCS) an open-source research platform has been developed. Within this platform we can leverage the existing resources and expertise within ISMCS to develop new and improved solutions for mechanical circulatory support (MCS) of heart failure patients to improve patient outcomes and quality of life. Furthermore the OpenHeart Project seeks to improve education and training of emerging researcher within the field of MCS through the development of online curricula and training tools, which will be available to students for free around the globe.

# Milestones

## 1. Introduction video / animation how the OpenHeart Project works / structure

* Define storyline for video
* Research software / tools on how to create video / animation
* Create first draft
* Get feedback from early adaptors and people in the dark about OpenHeart

## 2. Improved ‘How to…’ documentation & tutorials

* Update current documentation on how to use Bitbucket / SourceTree / Confluence for data repositories and MCS wiki / glossary
* Beta testing of documentation with early adaptors
* Improve as needed
* Research tools / software on how to capture screen videos for ‘How to…’ tutorial videos
* Choice between voice over narration or text in video
* Create first video snippets

## 3. Engagement strategy & community growth

* Identify research groups / labs and individuals to engage with OpenHeart Project
* Identify core benefits ‘Why do we as a group be involved?’ ‘What is in it for me as an individual?’
* Contact groups / individuals
* Have community work together on OpenHeart during Mozilla Hack

## 4. Open online lecture serious ‘Mechanical Circulatory Support’

* Structure of lecture serious? Video lectures with additional slides as virtual handouts and multiple choice exam after each module? MOOC through University developed?
* Identify potential modules
* Identify potential contributors / lecturers
* Meet with learning designer from Griffith University

# How to get involved?