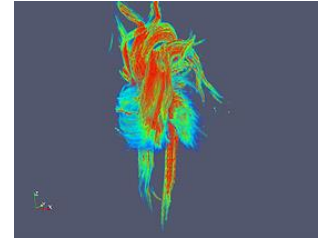


University of Sydney Cardiovascular Initiative 2019 Year in Review



Executive Summary

In its second year the Cardiovascular Initiative (CVI) has become an important mechanism to enhance multidisciplinary research, establish collaborations, and promote our researchers. We have seen funding increases, broad engagement from across the University's faculties and significant representation in national leadership roles. Our strategy has been endorsed and ongoing funding secured through 2021.

CVI enabled collaborations, events, and strategic national and international relationships have increased multidisciplinary research, funding opportunities and outcomes. Importantly the Catalyst program has been crucial in helping us identify emerging and outstanding EMCRs that warrant further exposure and promotion into external networks, collaborative projects and funding opportunities. Seed grants have supported collaborative research that has led to high impact publications and generated data to support human ethics application for clinical trials, patent submissions and the establishment of a new academic clinic at the Charles Perkins Centre. This resulting success has enabled over \$6.3M in further funding.

Strong relationships have been established with strategic partners across government, peak bodies, research institutions and industry in Australia and internationally. The most important of these are the Australian Cardiovascular Alliance (ACvA), the Heart Foundation (HF), the NSW Office for Health and Medical Research (OHMR), the NSW Cardiovascular Research Network (CVRN), the Federal Office of Health and Medical Research, the National Collaborative Research Infrastructure Strategy (NCRIS) network, and the BROAD Institute of MIT and Harvard.

The close relationship between the CVI and the ACvA saw the CVI strategy form the framework for formal discussions between the ACvA and the Federal Health Minister and subsequent announcement of the \$220million MRFF Mission for Cardiovascular Health. The aligned strategies of the CVI and ACvA have enabled the University of Sydney to achieve the highest representation of any Institution on the ACvA leadership and advisory panels and the MRFF Mission for Cardiovascular Health expert advisory panel. It has also provided opportunities for our emerging leaders, using their experience on CVI Pipelines to help them succeed with appointments on the ACvA Flagship Advisory Groups.

Strategic and Operational Success

The CVI has achieved success through a focused approach to three prioritised research pipelines, Bioengineering, Drug Discovery and Precision Medicine to achieve our key strategic objectives: Build Capacity, Accelerate Translation and Increase Global Impact.

For 2019 the focus was to build a strong multidisciplinary base and engagement both within and external to the University and to expand the University of Sydney brand in Cardiovascular Health.

Build Capacity

The CVI has increased research excellence through developing networks, driving multidisciplinary collaborations, investing in outstanding researchers, and building partnerships locally and globally. The CVI network of clinical and fundamental researchers represents all University faculties and campuses and the 3 affiliated local health districts (LHD's), Sydney, Western Sydney, and Northern Sydney. Key internal relationships within the University are shown in Figure 1.

Communications are achieved through an externally facing web page and internally directed newsletters. CVI has almost 400 members and over 500 broader interested stakeholders. The targeted research pipelines of Bioengineering, Precision Medicine and Drug Discovery focus efforts on prioritised themes providing multi-disciplinary expert collaborations of high value to internal and external partners.



Figure 1: CVI University of Sydney partner network

Symposia or workshops run for each of the CVI research pipelines - Precision Medicine, Bioengineering, and Drug Discovery – and for Indigenous Ethics and AHMRC Guidelines promoted networking, multidisciplinary team building, determined priority research areas based on clinical need and facilitated the formation of focussed project teams. Many of these project teams were then successful in securing catalyst award seed funding.

In 2019 the CVI Catalyst awards provided competitive seed funding of \$10K each to 12 EMCR led innovative, multi-disciplinary project teams, enabling them to develop their research and apply for further external competitive funding We look forward to following their progress in 2020 and beyond.

We have seen the nine 2018 catalyst award projects (total value \$90K) progress, with all projects ongoing. All have been presented at conferences and been published or have manuscripts in preparation. Over \$6.3M funding has been leveraged to continue these projects, with sources including HF Vanguard, NSW Minimum Viable Product, Sydney Nano Grand Challenge, Ramaciotti Health Investment, Innovative Manufacturing CRC, and ARC Linkage grants. Two devices have received human ethics approval and/or biomedical safety certificate for use in clinical trials, a patent has been submitted and a new clinic has been approved in the Charles Perkins Centre. Recipients included 16 EMCR CI's and 9 senior mentors representing Concord, Northern, Westmead, and Central Clinical Schools, School of Medical Sciences, School of Physics, School of Biomedical Engineering, Westmead Institute of Medical Research, Westmead Applied Research Centre, Kolling Institute of Medical Research, ANZAC Research Institute, Heart Research Institute and Charles Perkins Centre.

Accelerate Translation



Figure 2: CVI external network

The CVI is building networks and relationships, shown in figure 2, required to accelerate CV research translation and impact by establishing high value engagement and linkages with the health system, government, industry, peak bodies and international medical research institutes that incorporate complementary capacity, policy alignment, expertise and investment.

Strategic relationships have been developed with the NSW OHMR, NSW CVRN, NSW Biobank, ACvA, Australian HF, NCRIS network, Federal Office of Health and Medical Research, and BROAD Institute of MIT and Harvard. An industry partner network is being built that includes Abbott, Inventia, Bayer, BMS, Novartis and Sanofi.

In addition to traditional funding opportunities the CVI model is aligned with the targeted funding for cardiovascular priorities of the NSW Office for Health and Medical Research (\$150 M over 10 years) and the MRFF Mission for Cardiovascular Health (\$220 M over 10 years). The multi-disciplinary approach to research translation, targeted research pipelines, focus on patient outcomes, integration with the public health system and industry partnerships has led to a consistent increase in new collaborations that have the potential to attract significant external competitive funding and deliver transformative change to patient care and health outcomes.

Increase Global Impact and University reputation

The CVI is now a well-recognised brand, representing a strong multidisciplinary base and engagement, both internally and external to the University of Sydney contributing to the breadth and quality of research and the reputation of the University. As we increase cardiovascular research capacity and accelerate translation through strong networks and targeted research pipelines global recognition and impact will increase.

University of Sydney CVI members received both 2019 NSW Ministerial Awards for Cardiovascular Research Excellence and over half of the 20 NSW capacity building Cardiovascular Clinician Scientist (7) and Cardiovascular Senior Scientist (4) grants, representing Concord, Northern, Westmead, and Central Clinical Schools, Westmead Institute of Medical Research, Westmead Applied Research Centre, Kolling Institute of Medical Research, ANZAC Research Institute, Centenary Institute, Heart Research Institute and Charles Perkins Centre.

Development and roll-out of the CVI strategy in 2018 formed the framework for formal discussions with the Federal Health Minister and subsequent successful proposal from the ACvA for an MRFF funded Mission for Cardiovascular Health. The CVI worked closely with the ACvA to develop the successful proposal for a MRFF Mission for Cardiovascular Health. The proposal was led by Professor Gemma Figtree in her role as President of the ACvA. In February 2019 the Federal Minister for Health announced the \$220 million MRFF Mission for Cardiovascular Health. Since then the CVI has worked closely with the ACvA to develop the national ACvA strategy and expert teams that will advise the Mission. The first two national ACvA events were presented in partnership with the CVI and hosted at the University of Sydney in November 2019. These events attracted sponsorship and collaboration from industry, the Broad Institute of MIT and Harvard, Bioplatforms Australia and the Australian Phenomics Network.

The close relationship between the CVI and ACvA and the aligned strategies has seen the University of Sydney achieve the highest representation of any Institution on the ACvA leadership and advisory panels and the MRFF Mission for Cardiovascular Health expert advisory panel.

Moving forward

Ongoing focus for the CVI is to meet increasing demand for access to facilitated multidisciplinary collaborations from both Sydney University and external groups that now recognise and approach the CVI; consolidate the national branding and leadership position for Sydney University in Cardiovascular health research funding, collaboration and impact; leverage the high value relationships established with State and Federal Governments, ACVA, MRIs, MDIs, SHP, HF and industry to address cardiovascular health impacts; and expand the CVI research development programs and profile of Sydney University's EMCR's.

Priorities for 2020 will include optimising opportunities with ACvA and MRFF Mission – aligned strategy, member leadership roles in events, collaborations, ACvA flagships, and funding opportunities- building our industry network, deepening the relationship with SHP and CPC, and integrating the CVI EMCR and the CVI Indigenous programs with those of the CPC.