

## CASE STUDY 4:

# AUSTRALIAN REGENERATIVE MEDICINE INSTITUTE

**The Victorian Government funding helped establish the Australian Regenerative Medicine Institute as a pre-eminent research institute that has forged the way in regenerative medicine, attracting exceptional talent, building lasting international partnerships and making remarkable discoveries that have changed how disease and injury are treated.**

### IDENTIFIED PROBLEM/GAP

In the mid-2000s, regenerative medicine was recognised as one of the most revolutionary and emerging fields in medical science. At Monash University, the Australian Stem Cell Centre, the Monash Immunology and Stem Cell Laboratory and stem cell companies were gaining significant traction in this area, forming a centre of excellence in regenerative medicine that was already attracting international attention.

There was a clear opportunity to leverage these existing strengths and catapult Monash University's leading role in regenerative medicine, both nationally and globally.

### OVERVIEW OF THE INVESTMENT

As part of the *Healthy Futures* Program, the Victorian Government entered into a joint venture with Monash University to build a new Australian Regenerative Medicine Institute – the first of its kind in Australia.

The Victorian Government invested \$35 million towards the \$138 million project to construct one of the world's largest stem cell research hubs to consolidate platform technology capabilities related to regenerative medicine in a central facility, and establish the critical mass to promote an integrated, interdisciplinary approach to regeneration. Officially opened in 2009, the Institute was also built to provide a focus on cutting edge research, clinical applications and the development of commercial products in one of the most significant and innovative fields of medical science. It was also intended to build international links, attract talent and provide a unique training environment for Victoria's young scientists.

### IMPACT

ARMI has established a strong reputation as a pre-eminent research institute that has forged the way in regenerative medicine, attracting exceptional talent, building lasting international partnerships with the global scientific community and making remarkable and life-changing discoveries that have and will transform how we treat disease and injury.

ARMI led Australia's Associate Membership of the European Molecular Biology Laboratory (EMBL). ARMI attained the appointment of the first two Australian EMBL Group leaders for the newly established EMBL Australia Partner Laboratory Network.

The EMBL Network has since played a critical role in the growth and international reputation of Australia's scientific community – internationalising Australian research,



IMAGE CREDIT: ARMI

empowering and training Australia's best early-career researchers and future scientific leaders and embedding powerful new enabling tools, such as bioinformatics and systems biology, in Australian life sciences. Without the leadership role that ARMI played, this Network may not have otherwise been formed.

Today, ARMI has 18 research groups with up to 250 staff and students, a comprehensive teaching program and plans for continued growth including the development of a new purpose-built hub facility suitable for research and manufacturing to also accommodate local regenerative medicine start-up companies. Initiating and leading the Centre for Commercialisation of Regenerative Medicine (CCRM) Australia, a national initiative to support translation and commercialisation of Australia's growing regenerative medicine sector not only underscores the Institute's

support for regenerative medicine but also provides the commercialisation expertise for ARMI's research pipeline.

ARMI's researchers have also secured significant competitive research funding, established unique enabling research infrastructure and have expanded in size and scope because of the targeted recruitment of exceptionally talented scientists and developed undergraduate and postgraduate education programs.

Of the 24 research group leaders recruited since inception, 20 were international recruits from leading institutes in North America (University of Toronto, Harvard University), Japan (Osaka University) and Europe (European Molecular Biology Laboratory). Except for two of these initial recruits, all have continued their research career within Australia.



## SOME OF ARMI'S REMARKABLE DISCOVERIES

- Discovery of how areas of the brain that are responsible for vision could potentially adapt to injury or trauma and ultimately prevent blindness.
- Unlocking a mechanism that triggers stem cell production in the blood.
- Developing the first research model for stroke that most closely resembles what happens in the human brain.
- Uncovered a vital mechanism underlying the process of myelination, a key characteristic of multiple sclerosis.
- Developed technology to speed up the mending of damaged bone, skin and, potentially, other tissue.