

# ARMI EXTERNAL SEMINAR SERIES 2020



10 YEARS  
2009-19

## Transcriptional control of mammalian heart development and regeneration

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### Abstract

The inability of the adult mammalian heart to regenerate following injury represents a major barrier in cardiovascular medicine. In contrast, the neonatal mammalian heart retains a transient capacity for regeneration, which is lost shortly after birth. Cardiomyocyte proliferation is required for neonatal heart regeneration but the underlying mechanisms remain poorly understood. This lecture will focus on the transcriptional mechanisms underpinning neonatal cardiomyocyte proliferation and silencing of the regenerative program after birth in mice and humans. In addition, the power of high-content screening approaches using human stem cell-derived cardiac organoids will be discussed with a specific focus on identifying drug targets for cardiac regeneration.

### Bio

A/Prof Porrello received his PhD in Physiology from The University of Melbourne in 2009. He was subsequently awarded an NHMRC/NHF C.J. Martin postdoctoral fellowship to undertake training at UT Southwestern Medical Center in Dallas, USA, under the guidance of Prof. Eric Olson. A/Prof Porrello returned to Australia in 2012 to establish the Cardiac Regeneration Laboratory in the School of Biomedical Sciences at The University of Queensland. In 2017, he was recruited back to Melbourne to take up a joint appointment at the Murdoch Children's Research Institute and The University of Melbourne where he currently heads the Cardiac Regeneration Laboratory and co-directs the Melbourne Children's Centre for Cardiovascular Genomics and Regenerative Medicine (CardioRegen). A/Prof Porrello is the inaugural Stafford Fox Medical Research Fellow at the Murdoch Children's Research Institute. He is a member of the Editorial Boards of *Circulation*, *npj Regenerative Medicine* and *PLoS One*. A/Prof Porrello's research on heart regeneration has been recognized by a number of awards including the Metcalf Prize for Stem Cell Research, Heart Foundation Paul Korner Innovation Award, Heart Foundation Researcher of the Year and A.K. McIntyre Prize (Australian Physiological Society).



### EVENT DETAILS

#### DATE:

Tuesday, 1<sup>st</sup> September

#### TIME:

11:00am

#### ZOOM:

<https://monash.zoom.us/j/9662742669?pwd=WFdiM0xLMUtLcFY0UVR6empQUytHUT09>

Or, go to <https://monash.zoom.us/join> and enter meeting ID: 966 2742 6692 and password: 14476103

#### HOST:

Dr Gonzalo del Monte Nieto



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