

Imaging the Developing Heart:

Combining Computing and Optics to
Image and Quantify a Highly Dynamic System

Dr Chas Nelson

University of Glasgow

**Tuesday February 27th
2018, 6pm**

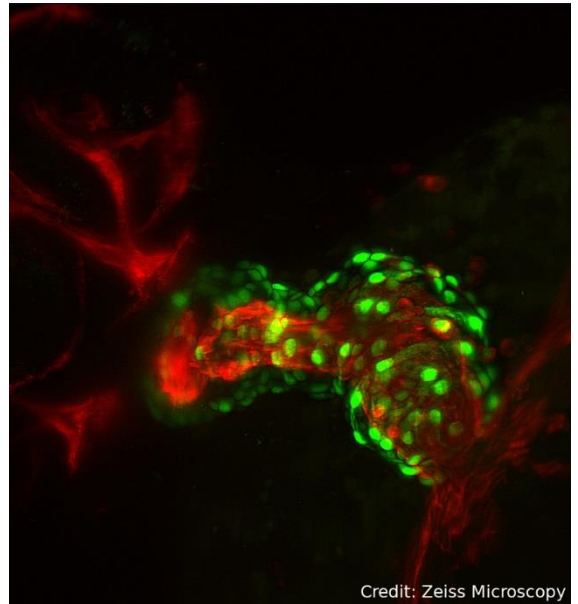
**Room 257, Kelvin Building
University of Glasgow**

Microscopy and imaging provide some of the most visually exciting and scientifically informative data available to the biosciences. Many revolutions have happened in microscopy - from the development of fluorescent imaging to current advances in using artificial intelligence to give super-resolved images. But there are still many challenges that must be solved by the combination of clever biology, clever physics and clever computing - imaging the living, beating heart is one of them.

In this talk Chas will discuss the state of the art approaches to imaging the living, beating heart of a zebrafish - a model organism for many cardiovascular diseases. In particular he will focus on the work done here at the University of Glasgow where we are able to 'computationally freeze' the heart, quantify blood flow dynamics and take near- instantaneous 3D snapshots of the beating heart. These techniques are opening up new biology and medicine but the fundamental challenges require new advances in both physics and computing - a truly interdisciplinary challenge.

Chas Nelson is a postdoctoral researcher at the University of Glasgow, working with Dr Jonathan Taylor on combining computational methods to enable imaging of the beating heart in living fish over the course of days over heart development and injury response and repair.

He received his PhD from Durham University in Bioimage Informatics and his research interests focus on the combination of advanced imaging and computing to answer challenging biological questions in new and better ways.



How to find us

The Kelvin Building, School of Physics and Astronomy, is on the main University Campus.

Free Parking is available on University Place.

You can find the Kelvin Building on a campus map at:

http://www.gla.ac.uk/media/media_1887_en.pdf