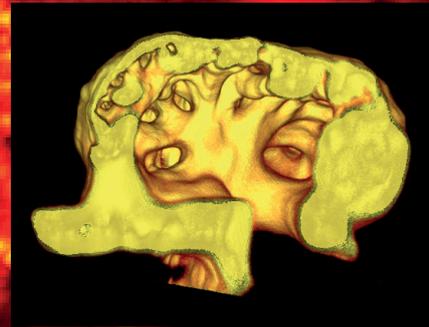




University of Central Lancashire

## The Jeremiah Horrocks Winter Lecture

Putting Light into the  
Lifesciences:  
Finding Nemo's Heart



The 2016 Winter Lecture by Professor John Girkin, Director Biophysical Sciences Institute, Durham University

Tuesday 13th December 2016 – 6.30pm  
Harrington Lecture Theatre,  
University of Central Lancashire

**FREE EVENT**

### Abstract

How can the combination of advanced astronomical telescopes and the humble Zebrafish help us understand and cure heart disease? By working together across traditional boundaries researchers are now solving highly complex challenges in the life sciences. This work is leading to significant advances in understanding a wide range of diseases with the target of improved healthcare and quality of life.

The roots of such collaborations can be seen in the invention of the optical microscope around 400 years ago, which led to a totally new way of observing life, resulting in the discovery of the cell and bacteria. These radical breakthroughs led to the desire to image life with ever greater detail leading to significant advances in optical physics and chemistry (the 2014 Nobel Prize for example) and thus driving research forward across many fields.

This lecture will initially look at how the sciences must work together to establish greater understanding and will then focus on recent developments in optical microscopy in particular their use in imaging Zebrafish to help understand heart disease. Examples will be given in which methods originally developed for extremely large astronomical telescopes can help image more deeply into samples to observe biological processes in three dimensions in realtime.

### Prof John Girkin

John studied physics at Oxford University before undertaking his PhD research in laser spectroscopy of atomic hydrogen at Southampton. He then worked in industry for ten years initially in the Cambridge area designing novel lasers and optical positioning tables and then for Keeler Ltd leading the development of air puff tonometers (to measure the pressure in the eye) and diode laser systems for the treatment of diabetic-related eye disease.

John moved to Strathclyde University to help establish the Institute of Photonics and found the Centre for Biophotonics, before moving to Durham University in 2009. Here he is based in the physics department but is the director of a university-wide research institute, the Biophysical Sciences Institute, which aims to help solve complex biological challenges by applying and developing new technologies and methods across the physical sciences.

**For more information and to book please see:**

**<https://jhi-winterlecture2016.eventbrite.co.uk>**

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