

# Vascular Oximetry: The Retina & Beyond

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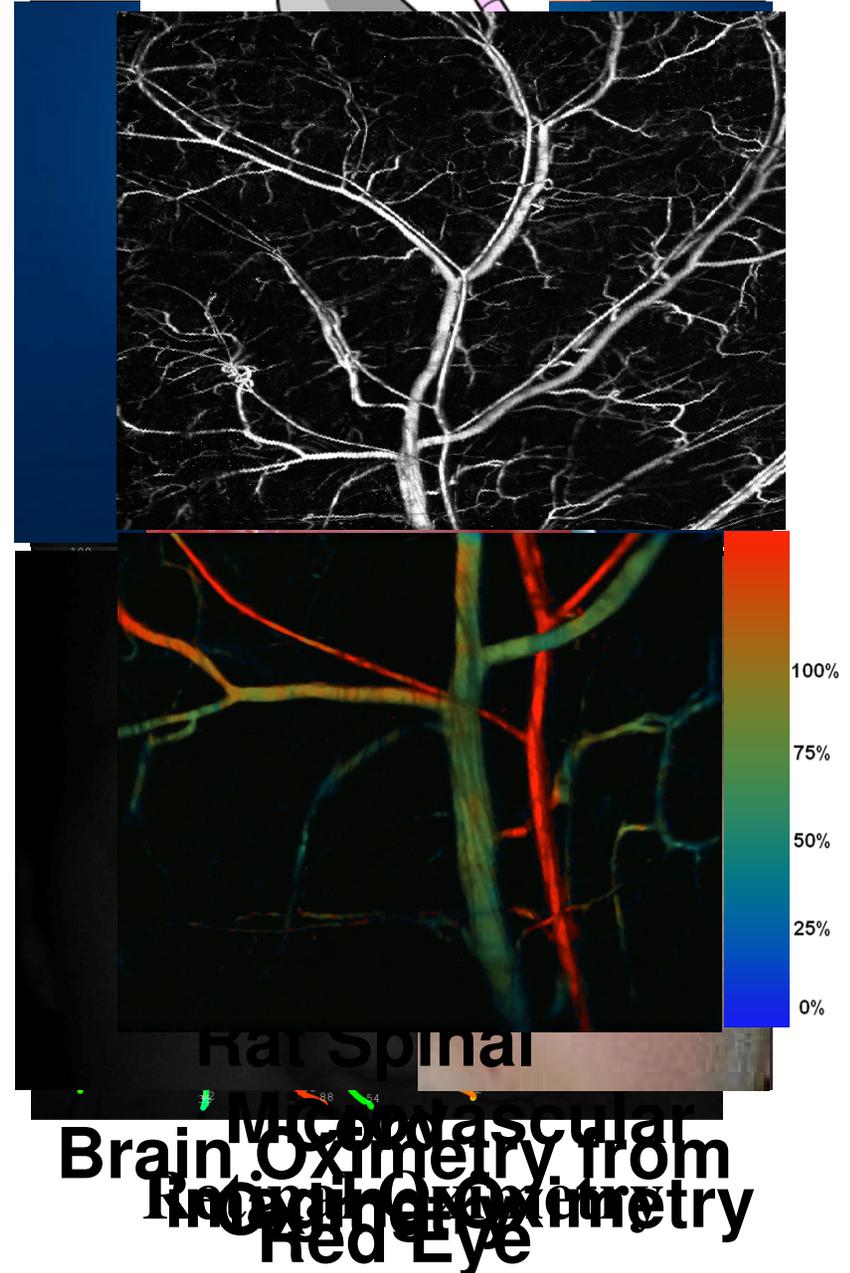
**Andy Harvey**



# Introduction

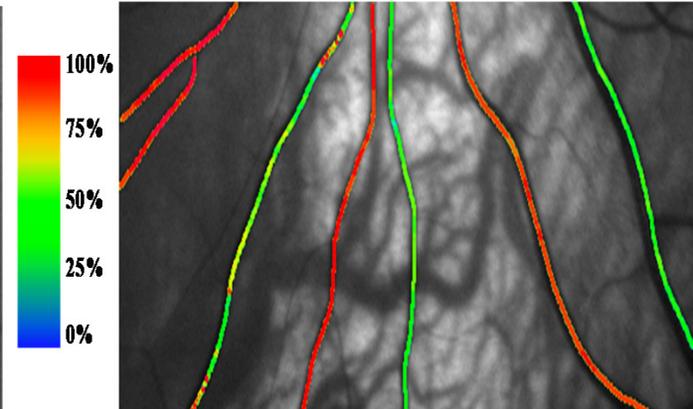
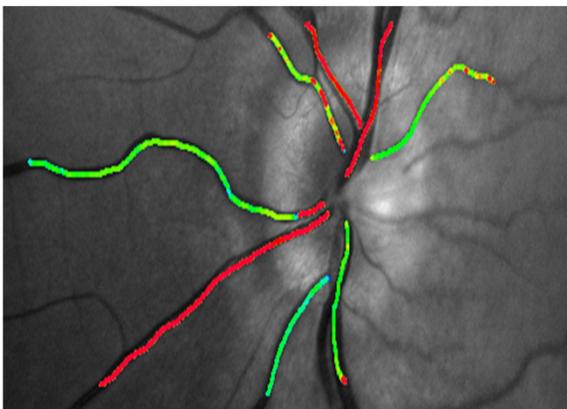
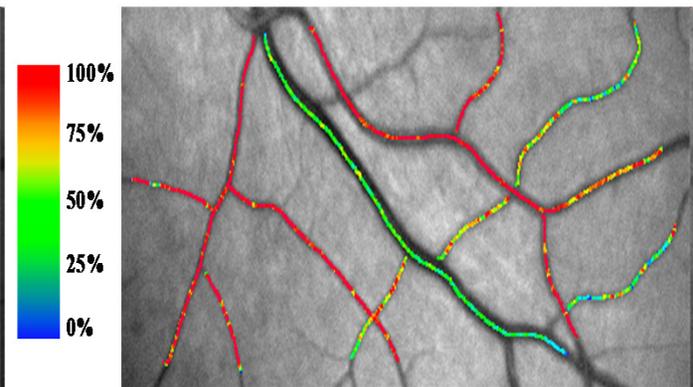
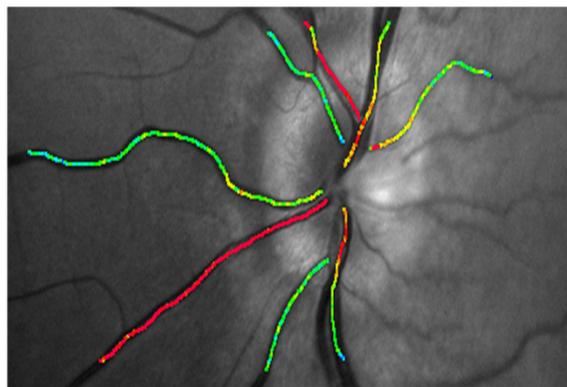
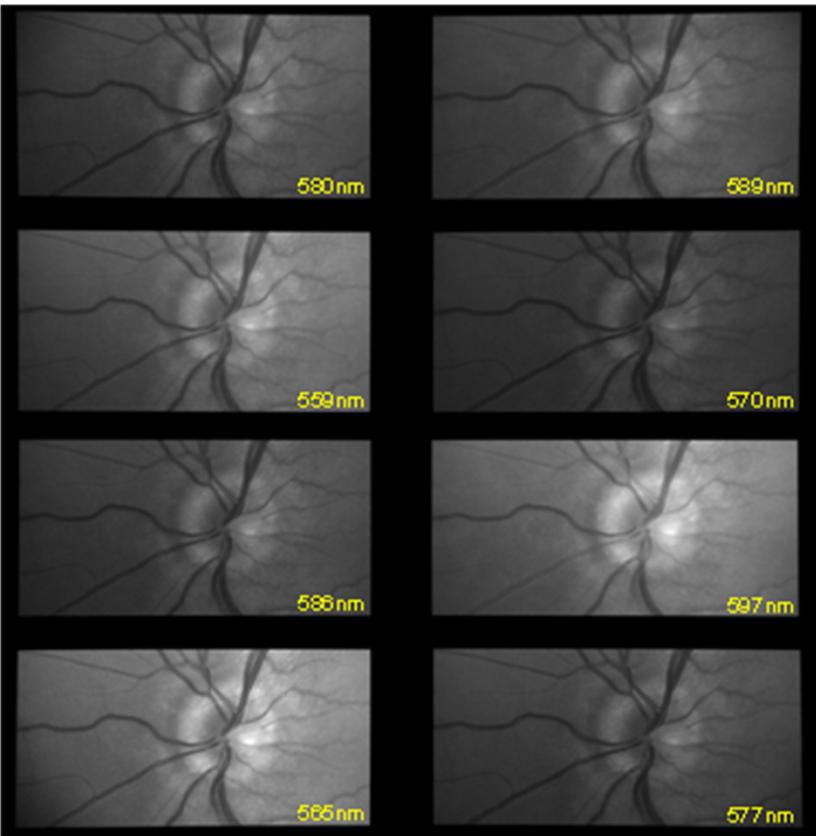
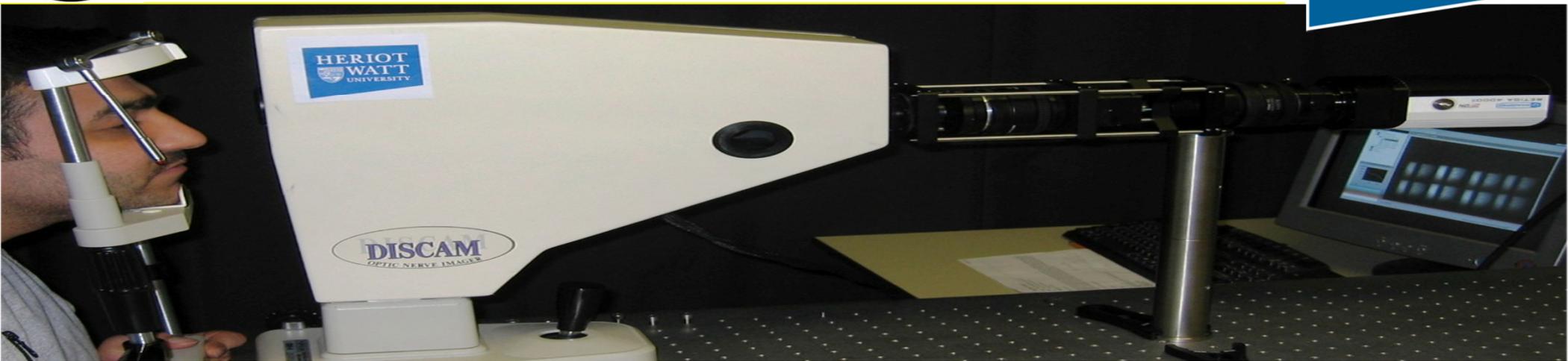


- Vascular Oximetry is measure of oxygen saturation in blood vessels
- Knowing oxygen saturation provides invaluable information in health and diseases
- E.g. Glaucoma, Diabetes, ARMD, Stroke etc
- We have developed novel, non-invasive technique for imaging and oximetry





# Retinal Oximetry by Spectral Imaging

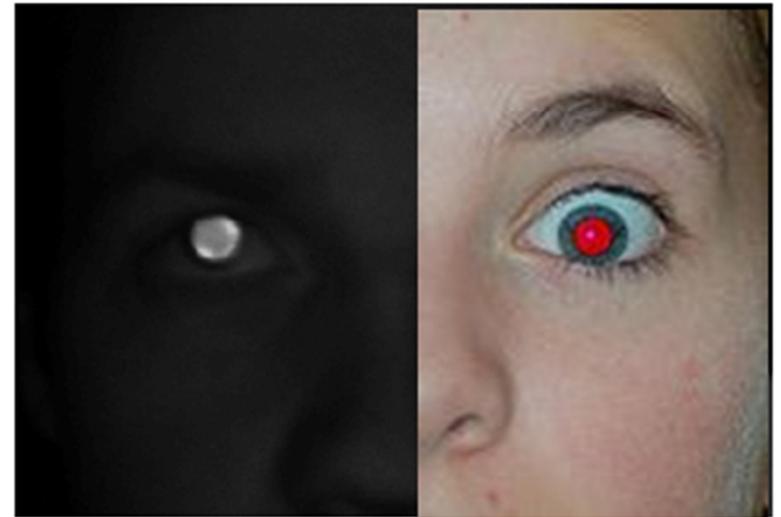
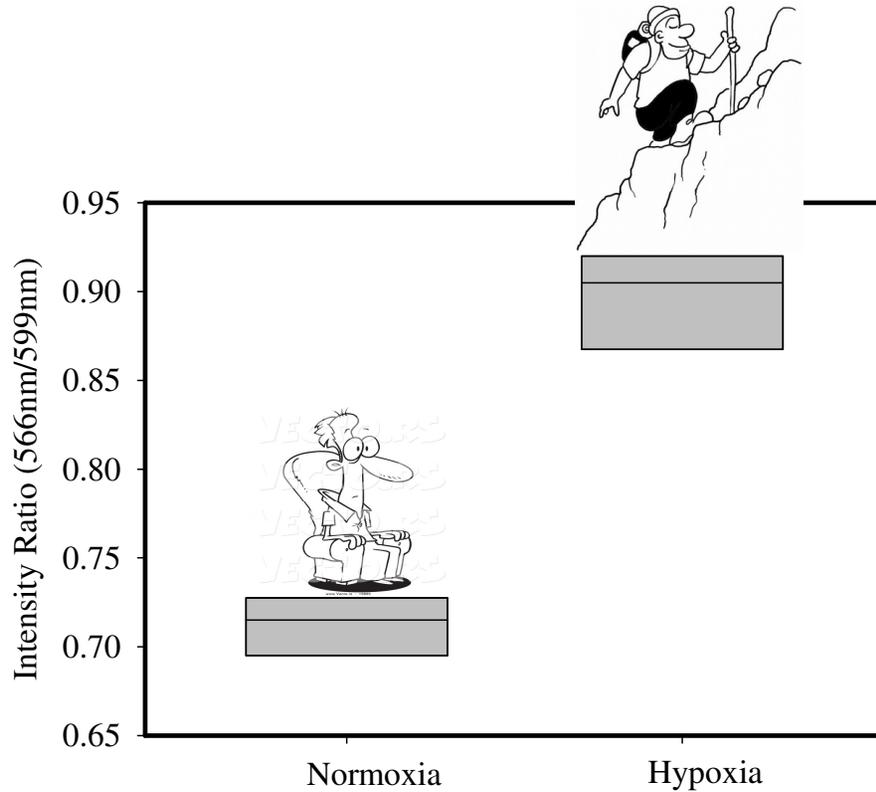




# Brain Oximetry



- Eye is a 'window' to look into brain
- Non-invasive imaging device to perform brain oximetry based on red eye reflectivity



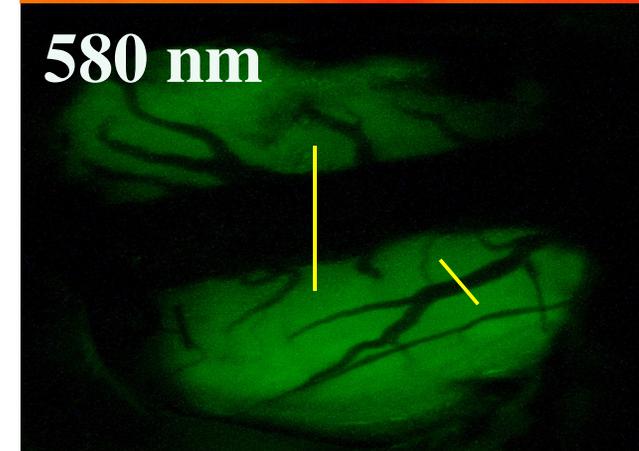
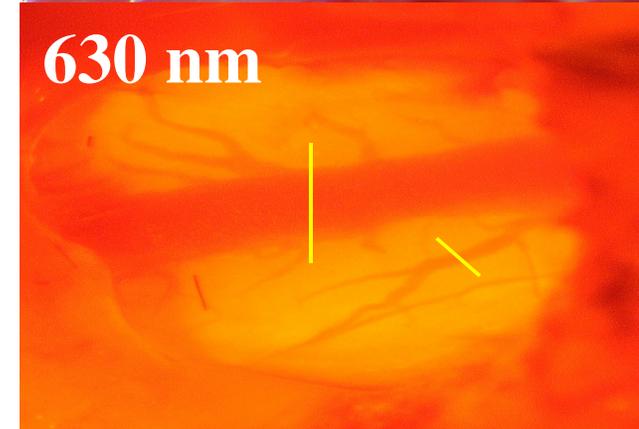
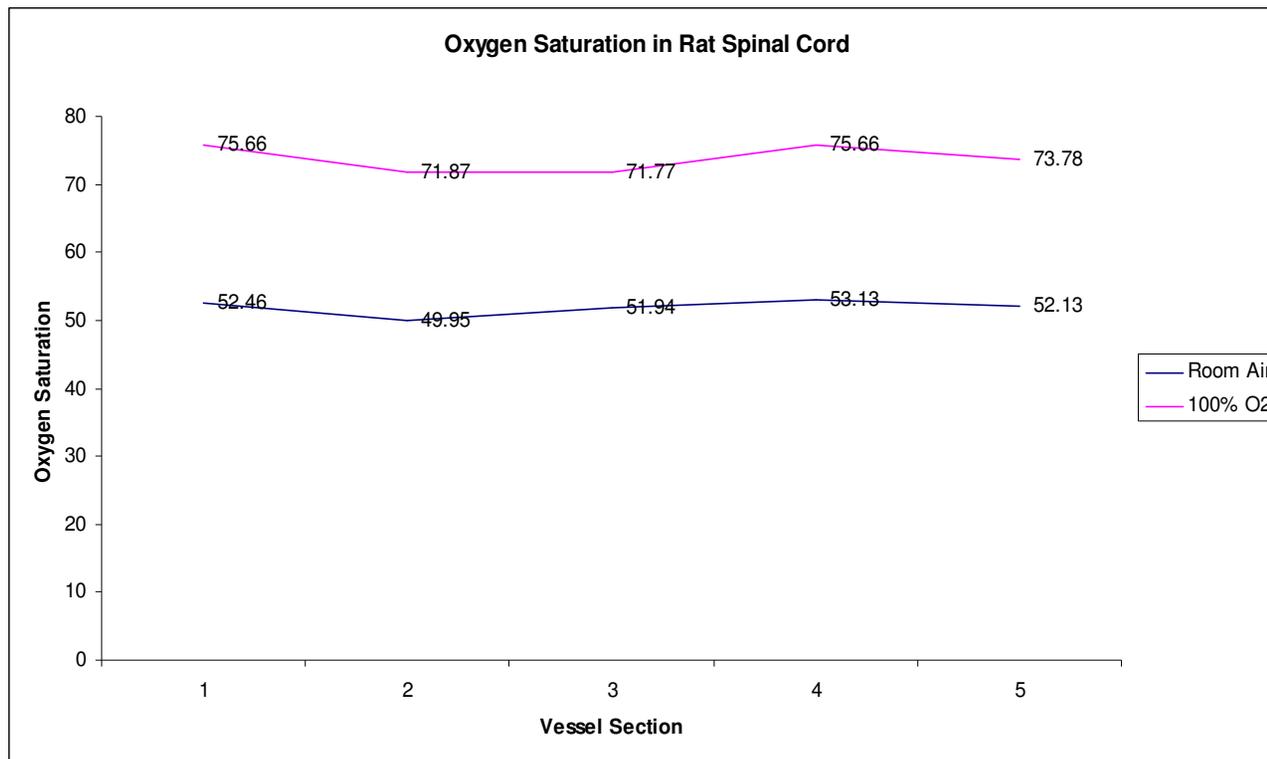
**Brain Oximetry from Red Eye**



# Rat Spinal Cord Oximetry



- In collaboration with UCL
- MS study in EAE rat model
- Hypoxia plays an important role in MS
- Spectral imaging – Oximetry on spine





# Microvascular Imaging Oximetry



- Diabetes is one of the major cause of foot amputation
- Develop an imaging device for microvascular imaging oximetry
- Several techniques for microvascular imaging
  - Photo-acoustic imaging
  - OCT, Hyperspectral Imaging etc
- No single technique provides everything
- We are trying to combine them and develop a solution

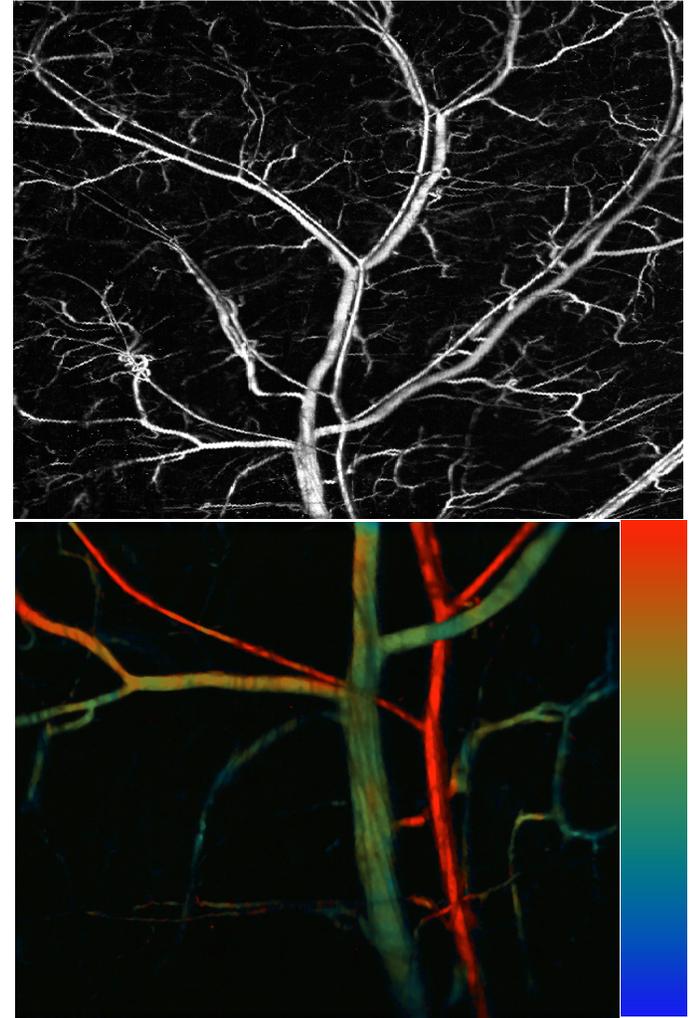


Photo-acoustic  
microscopic image of  
mouse ear

# Thank You

Guest Starring:

Lewis MacKenzie  
Laurence Brewer  
Javier Fernandez-  
Ramos  
Ken Smith  
Andrew Davies