IMAGING IN THE EYE IV:
TECHNOLOGIES AND CLINICAL APPLICATIONS
Full-day meeting: 10:55 am, 28th May, 2008
The Institute of Physics
76 Portland Place, London, W1B 1NT

Programme and Abstracts

CHAIR: ANDY MCNAUGHT, GLOUCESTERSHIRE EYE UNIT

10:55  Welcome

11:00 Challenges in Retinal Imaging - A Clinical Perspective (Invited)
Simon Harding
Royal Liverpool University Hospital

11:30 Joining Retinal Vessel Segments
Bashir Al-Diri, Andrew Hunter, David Steel, Maged Habbeeb
1University of Lincoln
2Sunderland Eye Infirmary

11:45 Automated detection of referrable diabetic retinopathy
Alan Fleming, Keith Goatman, Graeme Williams, Sam Philip, Peter Sharp, John Olson
1Biomedical Physics, Aberdeen University
2Diabetes Retinal Screening Service, Foresterhill, Aberdeen

12:00 Specifying Diabetic Retinal Lesions using Multi-variate Gaussian Model Fitting
E.M. Massey, A. Hunter
Department of Computing and Informatics, University of Lincoln

12:15 Contextual detection of diabetic pathology in wide-field retinal angiograms
E Trucco, C R Buchanan, B Dhillon
1School of Computing, University of Dundee
2School of Engin. and Physical Sciences, Heriot Watt University
3Princess Alexandra Eye Pavilion, NHS and University of Edinburgh

12:30-14:00 LUNCH AND POSTER PROGRAMME
– See endnote for how to reserve lunch at the meeting

CHAIR: EMANUELE TRUCCO, DUNDEE UNIVERSITY

14:00 Developments in Retinal Imaging (TBC)
Fred Fitzke
Moorfields Hospital, University College, London

14:30 Robust detection of retinal landmarks
Emanuele Trucco and Adria` Perez Rovira
School of Computing, University of Dundee

14:45 Retinal Fundus Image Contrast Normalization using Mixture of Gaussians
Abhir Bhalerao, Sarabjot Anand and Ponnusamy Saravanan
1Department of Computer Science, University of Warwick
2Department of Diabetes and Endocrinology, University Hospitals of Coventry and Warwickshire

15:00 A Virtual Scanning Laser Ophthalmoscope (VSLO) — Simulating the image formation process of a confocal microscope
Steve Gruppetta
Department of Optometry and Visual Science, City University, London

15:15 The English Diabetic Retinal Screening Programme
Peter Scanlon
1Ophthalmology, Gloucestershire Eye Unit, Cheltenham

15:30-16:00 TEA

CHAIR: ANDY HARVEY, HERIOT WATT UNIVERSITY

16:00 Retinal Vessel Oximetry Using Hyperspectral Imaging in Retinovascular Disease
D.J. Mordant, I. Alabboud, A.R. Harvey, A. I. McNaught
1Ophthalmology, Gloucestershire Eye Unit, Cheltenham

16:15 A Virtual Laser Scanning Ophthalmoscope — Simulating the image formation process of a confocal microscope
Steve Gruppetta
Department of Optometry and Visual Science, City University, London

16:30-17:00 TEA
16:15 In Vivo Measurement of Ocular Aberrations with a Distorted Grating Wavefront Sensor
P. Harrison¹, L. Diaz-Santana², D.M. Cuevas¹, G.R.G. Erry¹, P. Fournier¹, C. Torti²
¹Kestrel Corporation, Albuquerque, USA
²Henry Wellcome Laboratories for Visual Science, Dept. of Optometry and Visual Science, City University, London

16:30 Numerical Measurements of In-Vivo Cornea Shape using En-Face Multiple Delay Element OCT
Lucian Plesea, Adrian Gh. Podoleanu
Applied Optics Group, School of Physical Sciences, University of Kent

16:45 Development of a Snapshot Spectral Imaging Camera for Blood Oximetry in the Retinal Vasculature
G. Muyo¹, I. Alabboud¹, A. Gorman¹, D. Mordant², A. I. McNaught¹ and A. R. Harvey¹
¹School of Engineering and Physical Sciences, Heriot Watt University
²Ophthalmology, Gloucestershire Eye Unit, Cheltenham

17:00 Retinal Oximetry: Clinical Studies
S.H. Hardarson¹,2, S. Traustason², R.A. Karlsson², G.H. Halldorsson², T. Eysteinsson¹, J.M. Beach², J.A. Benediktsson³, E. Stefansson¹
¹University of Iceland-Ophthalmology
²Oxymap ehf., Iceland
³University of Iceland-Electrical and Computer Engineering.

17:15 CLOSE

POSTER PROGRAMME

Development of a model eye to calibrate a hyperspectral imager for blood oximetry in the human retina
I. Alabboud¹, D.J. Mordant¹, A. I. McNaught¹, A.R. Harvey²,
¹School of Engineering and Physical Sciences, Heriot Watt University
²Ophthalmology, Gloucestershire Eye Unit, Cheltenham

Automated detection of Age-related Macular Degeneration for screening programmes
Navdeep Saini¹, Tom Williamson², Sarah Barman³, Bunyarit Uyyanonvara¹, Akara Sopharak, Cattleya Duanggate²
¹City University; ²St Thomas’ Hospital, ³Kingston University, ⁴Thammasat University

Automatic Exudate Detection with a Support Vector Machine Classifier
Akara Sopharak¹, Khine Thet Nwe², Yin Aye Moe², Matthew N. Dailey², Bunyarit Uyyanonvara¹, Sarah Barman³
¹Sirindhorn International Institute of Technology, Thammasat University
²Computer Science and Information Management, Asian Institute of Technology
³Kingston University, UK

IF YOU WOULD LIKE TO PRESENT A POSTER PLEASE E-MAIL A.R.HARVEY@HW.AC.UK

The meeting is open to all and there is no charge.
A buffet lunch will be available at £10 per person, payable on the day: reserve lunch by e-mailing a.r.harvey@hw.ac.uk by Monday 26th May with ‘IoP Lunch’ in the subject heading. Meals may also be obtained from various outlets along Great Portland Street or at the Royal Institute of British Architects

Abstracts for this meeting are at http://www.ece.eps.hw.ac.uk/~arharvey/IoP/ImagingInTheEye08.pdf

MEETING ORGANISERS
Dr Sarah Barman, Kingston University, Dr Keith Goatman, University of Aberdeen, Prof Andy Harvey, Heriot Watt University, Prof Andy McNaught, Cheltenham Eye Clinic Prof Emanuele Trucco, University of Dundee

For further information on this conference, please contact
Andy Harvey (a.r.harvey@hw.ac.uk, tel 0131 451 3356), Andy McNaught (andy.mcnaught@btopenworld.com, tel. 07774032718) or Emanuele Trucco (e.trucco@dundee.ac.uk, tel. 01382 386504)