



Conference Programme

Saturday 28th June

From 12.00

Registration

From 17.45

Professor Michael Arthur, President and Provost of UCL
Professor Clare Elwell, President of ISOTT2014
Official welcome

Nick Lane, UCL, UK – Keynote Talk
Mitochondria: key to complexity

Welcome reception, UCL Cloister and Roof Garden

Sunday 29th June

- 8.30 – 9.00 **John Severinghaus, UCSF, USA – Plenary Talk**
Crediting eight who helped discover oxygen
- 9.00 – 9.45 **Carsten Lundby, University of Zurich, Switzerland - Keynote Talk**
Oxygen transport after altitude training and EPO doping
- 9.45 – 10.15 *Coffee break and poster viewing*

Session: Muscle, oxygen and exercise

- 10.15 – 10.45 **Ken Schenkman, University of Washington, USA – Plenary Talk**
Combined visible and NIR analysis of muscle oxygenation
- 10.45 – 11.00 **Scott Bowen, Leipzig University, Germany**
The spatial distribution of absolute skeletal muscle deoxygenation during ramp-incremental exercise is not influenced by hypoxia
- 11.00 – 11.15 **Takuya Osawa, Japan Institute of Sports Sciences, Japan**
The influence of exercise intensity and inspired O₂ on muscle deoxygenation were different between the thigh and calf during square-wave running exercise
- 11.15 – 11.30 **Benjamin Jones, University of Essex, UK**
Portable underwater Near Infrared Spectroscopy measurements of muscle oxygenation: laboratory validation and preliminary observations in swimmers and triathletes

Poster flash presentations

- 11.30 – 11.32 **André Steimers, University of Applied Sciences Koblenz, Germany**
Muscle oxygenation during running assessed by broad band NIRS
- 11.32 – 11.34 **Royotaro Kime, Tokyo Medical University, Japan**
Regional differences in muscle energy metabolism in human muscle by ³¹P-chemical shift imaging
- 11.36 – 11.38 **Shun Takagi, Waseda University, Japan**
Sex-related differences in muscle deoxygenation response during cycling exercise between aerobic capacity-matched elderly men and women
- 11.38 – 11.40 **Eva Raisa Van Ginderdeuren, University Hospital Leuven, Belgium**
Combined near-infrared spectroscopy and surface electromyography in Duchenne muscular dystrophy: contraction-induced changes in muscle oxygenation. Discussion and future prospects
- 11.40 – 11.42 **Andri Feldmann, Swinco AG, Switzerland**
Effect of respiratory manipulation on muscle oxygen saturation
- 11.42 – 11.44 **Atsuhiko Tsubaki, Nigata University, Japan**
Changes in oxyhemoglobin signal during low-intensity cycle ergometer activity: A near-infrared spectroscopy study
- 11.44 – 11.46 **Sam Ballak, VU University Amsterdam, The Netherlands**
Validation of a new semi-automated technique to evaluate muscle capillarisation

11.46 – 11.48 **Takuya Osawa, Japan Institute of Sports Sciences, Japan**
Validation of two tissue blood volume parameters measured by near-infrared spectroscopy

11.48 – 11.50 **Masahiro Horiuchi, Yamanashi Inst. of Environmental Sciences, Japan**
Reduction in cerebral oxygenation after prolonged exercise in hypoxia is related to changes in blood pressure

11.50 – 13.00 *Lunch*

Session: Altitude

13.00 – 13.45 **Monty Mythen, UCL, UK – Keynote Talk**
Human adaptation to hypoxia: lessons from Everest

13.34 – 14.15 **Peter Wagner, University of California San Diego, USA – Plenary Talk**
Exercise capacity and hemoglobin concentration in Tibetan high altitude natives

14.15 – 14.30 **Ronan Astin, UCL, UK**
Haemoglobin mass is greater in native Himalayan highlanders than native lowlanders

Poster flash presentations

14.30 – 14.32 **Sainath Raman, Great Ormond Street Hospital, UK**
Change in oxygen extraction at high altitude: YES2 study

14.32 – 14.34 **Chris Wolff, Queen Mary College, UK**
Relationships between AMS, SaO₂ and HR during a high altitude expedition to 5000 metres

14.40 – 15.25 *Tea break and poster viewing*

Session: Mathematical Models

15.25 – 15.55 **James Bassingthwaite, Univ. of Washington, USA – Plenary Talk**
Modeling the pathway for oxygen

15.55 – 16.10 **Adrian Luecker, ETH Zurich, Switzerland**
Validation of a new model for oxygen transport in the microcirculation

16.10 – 16.40 **Sergio Fantini, Tufts University; USA – Plenary Talk**
A new model relates the tissue concentration of haemoglobin to microcirculation and oxygen consumption dynamics

16.40 – 16.55 **Tharindi Hapuarachchi, UCL, UK**
Simulation of neonatal brain metabolism using a computational model

Poster flash presentations

16.55 – 16.57 **Tuhin K. Roy, Mayo Clinic, USA**
Theoretical analysis of the determinants of lung diffusing capacity

- 16.57 – 16.59 **Paul Sweeney, UCL, UK**
Mathematical modelling of blood perfusion and oxygenation in microvascular networks with applications in stroke research
- 16.59 – 17.01 **Zimei Rong, University of Nottingham Ningbo, China**
Hemoglobin effects on nitric oxide mediated hypoxic vasodilation
- 17.01 – 17.03 **Franca Schmid, ETH Zurich, Switzerland**
The impact of red blood cells on the flow in cortical microvascular networks
- 17.03 – 17.05 **Chris Wolff, Queen Mary College, UK**
Regulation of blood flow and pressure
- 17.05 – 17.07 **Ufuk Olgac, University of Zurich, Switzerland**
Dynamics of renal oxygen transport: three-dimensional computational whole kidney model

Session: Critical Care Adult (I)

- 17.10 – 17.40 **Edwin Nemoto, University of New Mexico, USA, Kovach Plenary Talk**
Drug reducing polymer enhances microvascular perfusion in the traumatized brain with intracranial hypertension
- 17.40 – 17.55 **David Highton, National Hospital for Neurology & Neurosurgery, UK**
Near infrared light scattering changes following acute brain injury
- 17.55 – 18.10 **Avraham Mayevsky, Bar Ilan University, Israel**
Does brain sparing effect following hemorrhage remain intact under focal cerebral ischemia?

Poster flash presentations

- 18.10 – 18.12 **A. Trofimov, Nizhniy Novgorod State Medical Academy, Russia**
Comparison of cerebral oximetry and cerebral perfusion computed tomography in cerebral blood flow monitoring in patients with brain injury
- 18.12 – 18.14 **Tsukasa Yagi, Surugadai Nihon University Hospital, Japan**
Detection of ROSC in patients with cardiac arrest during chest compression using NIRS: a pilot study
- 18.14 – 18.16 **Duane Bruley, Sythesizer, Inc., USA**
A compelling case for the use of perioperative zymogen protein C for increased patient safety
- 18.16 – 18.18 **Mark Koning, Erasmus University Medical Center, The Netherlands**
Controlled hypoxia by in vivo clamping of mitochondrial PO₂
- From 18.30 Great British Pub Evening at Jeremy Bentham Pub

Monday 30th June

Session: Cancer Metabolism

- 8.00 – 8.45 **Sir Salvador Moncada, UCL, UK – Keynote Talk**
Mitochondria and cell proliferation
- 8.45 – 9.15 **A.I. Minchinton, University of British Columbia, Canada – Plenary Talk**
Metabolic manipulation of hypoxia and radiotherapy response by electron transport inhibitors
- 9.15 – 9.30 **Peter Vaupel, University Medical Center Mainz, Germany**
Adenosine accumulation: a crucial microenvironmental factor promoting cancer progression

Poster flash presentations

- 9.30 – 9.32 **Geraldine De Preter, Catholic University Leuven, Belgium**
Effects of the hydrogen sulfide donor NaHS on the respiration of cancer cells: involvement of the acidic pH, drug concentration and cell type
- 9.32 – 9.34 **Boris Epel, University of Chicago, USA**
Approaching oxygen-guided intensity modulated radiation therapy
- 9.34 – 9.36 **Arnulf Mayer, University Medical Center Mainz, Germany**
Is there a role for CA IX in the prediction of the response to neoadjuvant chemoradiotherapy of locally advanced rectal cancer?
- 9.36 – 9.38 **Marie-Aline Neveu, Catholic University Leuven, Belgium**
Impact of oxygenation status on ¹⁸F-FDG uptake inside solid tumors
- 9.38 – 9.40 **Lin Z. Li, University of Pennsylvania, USA**
Imaging the mitochondrial redox ratio of living breast cancer cells
- 9.40 – 10.30 *Coffee break and poster viewing*
- 10.30 – 10.45 **Geraldine De Preter, Catholic University Leuven, Belgium**
Direct evidence of the correlation between energetic metabolism and proliferation capacity of cancer cells *in vitro*
- 10.45 – 11.00 **Anne Riemann, Martin Luther University Halle-Wittenberg, Germany**
Hypoxia-related acidosis promotes metastasis formation by enhancing tumor cell motility
- 11.00 – 11.15 **Harold Swartz, The Geisel School of Medicine at Dartmouth, USA**
Repeated measurements of pO₂ in human subjects

Session: Cellular Hypoxia

- 11.15 – 11.45 **Victor Darley-Usmar, The University of Alabama, USA – Plenary Talk**
The bioenergetic health index: a new concept in mitochondrial translational research
- 11.45 – 12.00 **George Perdrizet, Kent Hospital, USA**
Preoperative stress conditioning in humans: is oxygen the drug of choice?

- 12.00 – 12.15 **Jianhuan Zhang, The University of Alabama at Birmingham, USA**
The effects of hypoxia-reoxygenation on neuronal bioenergetic response to nitric oxide and perturbation of glycolysis
- 12.15 – 12.30 **David Wilson, University of Pennsylvania, USA**
Regulation of mitochondrial oxidative phosphorylation: on the mechanism and kinetic behavior of cytochrome c oxidase
- 12.30 – 12.45 **Elji Takahashi, Saga University, Japan**
Survival of cells by anaerobic respiration
- 12.45 – 14.15 *Lunch*
- 14.15 – 14.45 **Malou Friederich-Persson, Uppsala University, Sweden – Plenary Talk**
Mitochondrial dysfunction in the development of nephropathy. Studies with diabetes, kidney transplantation and angiotensin II
- 14.45 – 15.00 **Ken Jian Liu, University of New Mexico, USA**
Normobaric hyperoxia reduces ischemic brain injury
- 15.00 – 15.15 **Andrew Davies, UCL, UK**
In vivo measurement of spinal cord oxygen saturation and blood flow in an animal model of neuroinflammatory disease
- 15.15 – 15.30 **Kim Chisholm, UCL, UK**
Vulnerability of brain mitochondria to hypoxia in a model of sepsis

Poster flash presentations

- 15.30 – 15.32 **Tiffany Lodge, University of Oxford, UK**
Sodium valproate induces mitochondrial dysfunction in a HepG2 liver model
- 15.32 – 15.34 **Hua Shi, Huazhong University of Science and Technology, China**
Mitochondrial NADH: an effective alarm parameter under four types of acute hypoxia
- 15.34 – 15.36 **Masahiro Shibata, Shibaura Institute of Technology, Japan**
Cardiovascular adaptation in response to chronic hypoxia in awake rats
- 15.36 – 15.38 **Nobuo Watanabe, Shibaura Institute of Technology, Japan**
Prototyping the experimental setup to quantify the tissue oxygen consumption rate and its feasibility test
- 15.38 – 15.40 **Karl Morten, University of Oxford, UK**
Model systems to investigate the mechanisms of ischaemia reperfusion injury in the liver: in vivo and in-vitro approaches
- 15.40 – 15.42 **Jing Yuan, Huazhong University of Science and Technology, China**
Quantitative high-resolution mapping energy metabolism state in large-size organ using all-in-liquid-nitrogen redox cryoimaging system
- 15.42 – 15.44 **Tomiyasu Koyama, Hokkaido University, Japan**
Breathing pores on ostrich egg shells
- 15.44 – 16.30 *Tea break and poster viewing*

- 16.30 – 16.45 **Joe La Manna, Case Western Reserve University, USA**
Aging effect on post-recovery hypoperfusion and mortality following cardiac arrest and resuscitation in rats
- 16.45 – 17.00 **Karl Morten, University of Oxford, UK**
Monitoring intracellular oxygen concentration - implications for hypoxia studies and real time oxygen monitoring

Session: Optical Techniques (I)

- 17.00 – 17.30 **Arjun Yodh, University of Pennsylvania, USA – Plenary Talk**
Optical measurements of cerebral blood flow: pressure modulation algorithms & other advances
- From 17.30 Museum and Jazz Evening

Tuesday 1st July

Session: Brain Oxygenation

- 8.00 – 8.45 **Elizabeth Hillman, Columbia University, USA – Keynote Talk**
Brain blood flow and metabolism; neurovascular mechanisms and postnatal brain developments
- 8.45 – 9.00 **Clare Elwell, UCL, UK**
Functional near infrared spectroscopy as an assessment tool for cognitive development in rural Gambia: studies from birth to 24 months of age
- 9.00 – 9.15 **Takashi Matsumoto, Waseda University, Japan**
Gender and age analyses of NIRS/STAI Pearson correlation coefficients at resting State
- 9.15 – 9.30 **Kaoru Sakatani, Nihon University, Japan**
Effects of cosmetic therapy on cognitive function of elderly women: a time-resolved spectroscopy study

Poster flash presentations

- 9.30 – 9.32 **Kaoru Sakatani, Nihon University, Japan**
Effects of acupuncture on anxiety levels and prefrontal cortex activity measured by near infrared spectroscopy: a pilot study
- 9.32 – 9.34 **Tomotaka Takeda, Tokyo Dental College, Japan**
Influence of pleasant and unpleasant auditory stimuli on cerebral blood flow and physiological changes in normal subjects
- 9.34 – 9.36 **Robert Linsenmeier, Northwestern University, USA**
Spontaneous fluctuations of PO₂ in rabbit somatosensory cortex
- 9.36 – 9.38 **Arnold Wilkins, Essex University, UK**
Haemodynamics, hypermetabolism and homeostasis
- 9.38 – 9.40 **Masahiko Nakano, Mitsubishi Gas Chemical Co., Inc., Japan**
Effect of antioxidant supplements, pyrroloquinoline quinone disodium salt (BioPQQ™), on cognitive functions
- 9.40 – 9.42 **J. Shi, Tsinghua University School of Medicine, China**
Effects of aging on working memory performance and prefrontal cortex activity: a time-resolved spectroscopy study
- 9.42 – 9.44 **Akitoshi Seiyama, Kyoto University, Japan**
Estimation of skin blood flow artefacts on NIRS signals during a verbal frequency task
- 9.44 – 9.46 **Bai Lei Sun, Huazhong University of Science and Technology, China**
Detection of optical neuronal signals in vivo and noninvasively using continuous wave near-infrared spectroscopy
- 9.46 – 9.48 **Haruna Takai, Niigata University of Health and Welfare, Japan**
Effect of transcranial direct current stimulation over the primary motor cortex on cerebral blood flow: a time-course study using near-infrared spectroscopy

- 9.48 – 9.50 **Qingming Luo, Huazhong University of Science and Technology, China**
Hemispheric asymmetry during a Chinese color-word matching Stroop task: a NIRS-based connectivity study
- 9.50 – 9.52 **Felix Scholkmann, University Hospital Zurich, Switzerland**
Very-low frequency fluctuations in cerebral hemodynamics and oxygenation measured with fNIRS – New insights into their origin using the Stockwell-transform coherence and phase coupling analysis
- 9.52 – 9.54 **Michiyo Konno, Tokyo Dental College, Japan**
Relationships between gum chewing and stress
- 10.00 – 10.30 *Coffee break and poster viewing*

Session: Multimodal Imaging

- 10.30 – 11.00 **Fahmeed Hyder, Yale University, USA – Plenary Talk**
Oxidative demand and extraction in the awake human brain
- 11.00 – 11.15 **Avraham Mayevski, Bar Ilan University, Israel**
Brain mitochondrial NADH, microcirculatory blood flow and oxygenation compared to pulse oximetry measurements under oxygen deficiency
- 11.15 – 11.30 **Gage Redler, University of Chicago**
Towards human oxygen images with EPRI

Poster flash presentations

- 11.30 – 11.32 **Shinsuke Nirengi, Ritsumeikan University, Japan**
Evaluation of brown adipose tissue using near-infrared time-resolved spectroscopy
- 11.32 – 11.34 **Linda Ahnen, University Hospital Zurich, Switzerland**
Near-infrared image reconstruction of newborns' brains: stability under perturbations of the source/detector location
- 11.34 – 11.36 **Qingming Luo, Huazhong University of Science and Technology, China**
Small animal imaging using fluorescence molecular tomography and micro-computed tomography
- 11.36 – 11.38 **Qingming Luo, Huazhong University of Science and Technology, China**
Blood vessel imaging using multi-scale photoacoustic microscopy

Session: Optical Techniques (II)

- 11.40 – 12.10 **David Boas, Harvard Medical School, USA – Plenary Talk**
Capillary oxygenation is lower than venous because of capillary transit time heterogeneity
- 12.10 – 12.25 **Sergei Vinogradov, University of Pennsylvania, USA**
Two-photon phosphorescence lifetime microscopy (2PLM) of oxygen
- 12.25 – 12.40 **Dmitri Papkovsky, University College Cork, Ireland**
Optical imaging of cell and tissue oxygenation by means of cell-penetrating phosphorescent probes

- 12.40 – 12.55 **Maritoni Litorja, National Institute of Standards and Technology, USA**
Visualizing tissue oxygenation by optical reflectance imaging and correlation to clinical laboratory methods
- 12.55 – 13.10 **André Steimers, University of Applied Sciences Koblenz, Germany**
Spectroscopic, hyperspectral imaging of haemoglobin oxygenation

Poster flash presentations

- 13.10 – 13.12 **Nassimsadat Nasser, University Hospital Zurich, Switzerland**
Local measurement of tissue oxygen saturation, an application of visible light spectroscopy
- 13.12 – 13.14 **Hiroachi Suzuki, Hamamatsu Photonics, Japan**
Hemodynamic measurements of human adult head in transmittance mode by near-infrared time-resolved spectroscopy
- 13.14 – 13.16 **Ken Nadamoto, Keio University, Japan**
Determination of optical properties of cortical tissue by lookup-table method for time-resolved measurement
- 13.16 – 13.18 **Clare Thorn, University of Exeter Medical School, UK**
Skin oxygen extraction derived during an arterial occlusion differs from that obtained in resting unperturbed skin
- 13.18 – 13.20 **Tomotsugu Yasuda, Kagoshima University, Japan**
Non-invasive monitoring of hepatic oxygenation using time-resolved spectroscopy
- 13.20 – 13.22 **Yu Yoshimori, Keio University, Japan**
Estimation of optical path length in blood vessels for optical imaging of expose cortex
- 13.22 – 13.24 **Minami Kato, Keio University, Japan**
Angular dependence of diffuse reflectance spectra of skin estimated by multi-layered model
- 13.24 – 13.26 **Stefan Kleiser, University Hospital Zurich, Switzerland**
The effect of changes in scattering and blood content on comparison of near-infrared oxygenation monitors in a liquid optical phantom
- 13.26 – 13.28 **André Steimers, University of Applied Sciences Koblenz, Germany**
Efficient algorithm for the temporal and spatial based calculation of speckle contrast
- 13.28 – 13.30 **Shin-ichi Fujisaka, Hamamatsu Photonics, Japan**
A clinical tissue oximeter using NIR time-resolved spectroscopy
- 13.30 – 13.32 **Terence Leung, UCL, UK**
Evaluation of limb tissue oxygenation at different elevation angles and their responses to local warming using a hybrid microwave-optical thermoregulation monitor
- 13.32 – 13.34 **Larisa Safonova, Bauman Moscow State Technical University, Russia**
Expansion of functional possibilities of tissue oximeters based on continuous wave measurements
- 13.34 – 13.36 **Larisa Safonova, Bauman Moscow State Technical University, Russia**
Bioadequate electromagnetic therapy efficiency estimation using tissue oximetry

- 13.36 – 13.38 **Peng Cheng Li, Huazhong University of Science and Technology, China**
Real-time Imaging of microcirculation using laser speckle: from basic to pre-clinic studies
- 13.38 – 13.40 **R. Hoshikawa, University of Electro-Communications Tokyo, Japan**
Two-dimensional velocity imaging of cortical surface vasculature in the anesthetized mouse brains exposed to chronic hypoxia
- 13.40 – 13.42 **Qingming Luo, Huazhong University of Science and Technology, China**
Visualizing a Mouse Brainwide Vascular Configuration and Coupling with Neuronal Networks at Sub-micron Resolution

Lunch Time Seminar

- 13:45 – 14:15 **Atsushi Maki, Hitachi High-Tech, Japan**
Evolution of optical topography - Neuroimaging to go
- 13.45 – 15.00 Lunch and poster viewing and poster viewing*
- After 15.00 Free afternoon

Wednesday 2nd July

Session: Critical Care Adult (II)

8.00 – 8.45 **Can Ince, Erasmus Un. of Rotterdam, the Netherlands – Keynote Talk**
The enigma of oxygen transport in critical care medicine

Session: Blood Substitutes (I)

8.45 – 9.15 **Abdu Alayash, Food and Drug Administration, USA – Plenary Talk**
Blood substitutes: why haven't we been more successful?

9.15 – 9.45 **Peter Keipert, Keipert Corp. Consulting, USA – Plenary Talk**
Clinical evaluation of MP4OX, an oxygen therapeutic agent and adjunct to resuscitation of severe hemorrhagic shock in trauma

9.45 – 10.00 **Billy Sze-Hang Lau, New A Innovation Limited, Hong Kong**
Dose-effects: hemodynamics, biochemical and tissue oxygen effects of a novel stabilized hemoglobin-based oxygen formulation (OC99); model of controlled severe oxygen debt via hemorrhagic shock and fluid volume

10.00 – 10.15 **Frank Zal, HEMARINA SA, France**
Supplementation of kidney machine perfusion with a new oxygen carrier to improve renal graft performance in a DCD porcine model

10.15 – 10.30 **Leif Bülow, Lund University, Sweden**
Hemoglobin-based blood substitutes (HBOCs) based on fetal hemoglobin

10.30 – 10.45 **Gary Silkstone, University of Essex, UK**
Modification of tyrosine electron transfer pathways in haemoglobin is protective against lipid oxidation

Poster flash presentations

10.45 – 10.47 **Darren Scroggie, UCL Medical School, UK**
Provision of oxygen for metabolic support of encapsulated liver cells during storage at ambient temperature using a perfluorocarbon

10.47 – 10.49 **Frank Zal, HEMARINA SA, France**
HEMO₂Life®, a natural oxygen transporter, improves donor heart preservation during prolonged storage

10.49 – 10.51 **Gary Silkstone, University of Essex, UK**
The βLys66Tyr variant of haemoglobin as a component of a blood substitute

10.51 – 11.20 *Coffee break and poster viewing*

Session: Critical Care Neonatal (I)

- 11.20 – 11.35 **T. Goos, Erasmus Medical Center, the Netherlands**
Cerebral hypoxia during the postnatal transition of very preterm infants directly after delivery by cesarean section
- 11.35 – 11.50 **Berndt Urlesberger, Medical University Graz, Austria**
Even mild respiratory distress alters tissue oxygenation significantly in preterm infants during neonatal transition

Poster flash presentations

- 11.50 – 11.52 **Berndt Urlesberger, Medical University Graz, Austria**
Regional cerebral oxygen saturation during neonatal transition: Is there an influence of gender?
- 11.52 – 11.54 **Nariae Baik, Medical University of Graz, Austria**
Do sustained lung inflations affect cerebral regional oxygen saturation in preterm infants?
- 11.54 – 11.56 **John Klaessens, VU Uni. Medical Center Amsterdam, the Netherlands**
Non-contact monitoring of vital signs: results of clinical measurements at a neonatal intensive care
- 11.56 – 11.58 **Noriya Hirose, Nihon University School of Medicine, Japan**
Oxygen supplementation is effective to attenuate the maternal cerebral blood deoxygenation after spinal anesthesia for cesarean section
- 11.58 – 12.00 **Yuko Kondo, Nihon University School of Medicine, Japan**
Changes in cerebral blood flow and oxygenation during induction of general anesthesia with sevoflurane or propofol
- 12.00 – 14.00 *Lunch and poster viewing*

Lunch Time Discussion Session: The future of Blood Substitutes

- 13.00 – 14.00 including contributions from
- A. Abuchowski, Prolong Pharmaceuticals, USA**
PEGylated carboxyhemoglobin bovine (Sanguinate™): results of clinical Safety testing and use in patients
- George Biro, University of Ottawa, Canada**
What can be learned from HBOC trial failures?
- Hiroshi Sakai, Nara Medical University, Japan**
Hemoglobin-vesicles for transfusion alternative and oxygen therapeutics

Session: Critical Care Neonatal (II)

- 14.00 – 14.15 **Harsimrat Singh, UCL, UK**
Cerebrovascular interactions in the neonatal brain during seizures

- 14.15 – 14.30 **Gemma Bale, UCL, UK**
In-vivo measurements of cerebral changes in cytochrome-c-oxidase using broadband near-infrared spectroscopy in neonates
- 14.30 – 14.45 **Alexander Caicedo, Catholic University Leuven, Belgium**
A new framework for the assessment of cerebral hemodynamic regulation in neonates using NIRS
- 14.45 – 15.00 **Felix Scholkmann, University Hospital Zurich, Switzerland**
Characterizing fluctuations of arterial and cerebral tissue oxygenation in preterm neonates by means of data analysis techniques for nonlinear dynamical systems
- 15.00 – 15.30 *Tea Break and poster viewing*

Session: Critical Care Neonatal (III)

- 15.30 – 15.45 **Martin Wolf, University Hospital Zurich, Switzerland**
Can the assessment of spontaneous oscillations by near infrared spectroscopy predict neurological outcome of preterm infants?
- 15.45 – 16.00 **Terence Leung, UCL, UK**
Investigation of the relationship between the sclera colour of the eye and the serum bilirubin level in newborn infants
- 16.00 – 16.15 **Nariae Baik, Medical University of Graz, Austria**
Influence of persistent foramen ovale (PFO) on regional cerebral oxygen saturation during immediate neonatal transition
- 16.15 – 16.30 **Justin Skowno, The Children's Hospital, Sidney, Australia**
Transcutaneous near infrared spectroscopy to detect severe hepatic ischaemia in a porcine model
- 16.30 – 17.30 Annual General Meeting
- From 19.00 River Cruise Banquet