**22nd International Conference on Oxygen Binding and Sensing Proteins (O2BiP) Conference Program (EBS 2.2)**

**Tue 26 - Fri 29 Aug 25**

**Tuesday 26th August 2025**

15:00-17:00 Registration

17:00-19:00 Welcome BBQ, Silberrad Centre Plaza

**Wednesday 27th August 2025, Rooms: EBS 2.2, 2.65 & 2.66**

08.30-17.00 Registration

08:40 - 09:10 Tea/Coffee, EBS 2.65 & 2.66

**09:10 -09:20** *Welcome - Brandon Reeder, School of Life Sciences, University of Essex*

**09.20-13.00 Session 1: Bacterial heme proteins and heme based sensors, EBS2.2**

**Chairpersons: Angelo Fago, Dimitri Svistunenko**

**09:20-09:45** *Anaerobic and aerobic sulfide binding to human neuroglobin: sulfheme derivatives*

**Federico Sebastiani,** Department of Chemistry, University of Florence, Florence, Italy

**9:45-10:10** *Dissecting the conformational complexity of a prokaryotic heme transporter*

**Schara Safarian,** Max Planck Institute of Biophysics, Frankfurt am Main, Germany

**10:10-10:35** *From antibacterial strategy to modulation of hemoglobin oxygen affinity: the unexpected dual role of C35*

**Serena Faggiano,** Department of Food and Drug, University of Parma, Parma, Italy

**10:35-11:00** *Anaerobic heme catabolism in three bacterial pathogens*

**Kirsten Wolthers,** Department of Chemistry, The University of British Columbia, Canada

11.00-11.30 Morning Refreshments and Posters, EBS 2.65 & 2.66

**11:30-11:55** *The high diversity of oxygen reactivity in bacterial terminal oxidases*

**Petra Hellwig,** Faculty of Chemistry,University of Strasbourg, Strasbourg, France

**11:55-12:20** *Targeting aerobic respiratory chains to combat bacterial pathogens*

**Mark Shepherd,** School of Biosciences, University of Kent, Canterbury, United Kingdom

**12:20-12:50** *Abstract selected speakers:*

**12:20-12:35** *The bd-type Cyanide Insensitive Oxidase from the multidrug-resistant pathogen Pseudomonas aeruginosa: interaction with gaseous ligands*

**Elena Forte,**Department of Biochemical Sciences “A. Rossi Fanelli”, Sapienza University of Rome, P. le A. Moro 5 00185 Rome, Italy

**12:35-12:50** *Targeting cytochrome bd oxidases from Acinetobacter baumannii with steroid drugs.*

**Guy Joiner,**School of Biosciences, University of Kent, Canterbury, United Kingdom.

12.50-14.00 Lunch and Poster Session, EBS 2.65 & 2.66

**14.00-17.20 Session 2: Evolution of Oxygen Binding Proteins, EBS2.2**

**Chairpersons: Michael Berenbrink**

**14:00-14:25** *Conformational analysis of human and crocodilian Hb by cryo-electron microscopy*

**Jeremy Tame,** Department of Biology and Biochemistry,Yokohama City University, Yokohama, Japan

**14:25-14:50** *Ngb function in Zebrafish – lessons learned from a knockout model*

**Andrej Fabrizius,** Department of Biology, University of Hamburg, Germany

**14:50-15:15** *Convergent reductions in hemoglobin buffering power in lineages of small, high-metabolic rate birds and mammals: implications for O2 delivery*

**Kevin Campbell,** Department of Molecular Physiology and Biophysics, University of Iowa, Iowa, United States of America.

**15:15-15:40** *Convergent reductions in hemoglobin buffering power in lineages of small, high-metabolic rate birds and mammals: implications for CO2 elimination*

**Michael Berenbrink,** Institute of Infection, Veterinary & Ecological Sciences University of Liverpool, United Kingdom

15:40 - 16:10 Afternoon refreshments and Posters, EBS 2.65 & 2.66

**16.10 -17.20** *Abstract selected speakers:*

**16.10-16.25***Characterization of bryophyte hemoglobins provides insight into ancestral functions*

**Ryan Sturms**, Drake University Department of Chemistry and Physics. Des Moines, USA

**16.25-16.40***The Role of Globin Proteins in the Transition from Water to Land*

**Soraya Safavi**, Institute of Cell and Systems Biology of Animals, University of Hamburg, D-20146 Hamburg, Germany

**16.40-16.55***Resurrecting lost ancient myoglobins to elucidate mechanisms of diving adaptation in mammals.*

**Hiroshi Imamura**, Department of Bio-Science, Nagahama Institute of Bio-Science and Technology, 1266 Tamura, Nagahama, Shiga 526-0829, Japan

**18.00-19.30**: **Evening excursion to Colchester Medieval Castle.**

**Thursday 28th August 2025**

09:00 - 09:20 Tea/Coffee, EBS 2.65 & 2.66

**09:20-13:00 Session 3: Structure, Function, and Dynamics, EBS2.2**

**Chairpersons: Mark Shepherd, Luca Ronda**

**09:20-09:45** *Phytoglobins - some new insights into their structure and biological function*

**Leif Bulow,** Department of Chemistry, Lund University, Lund, Sweden

**09:45-10:10** *Heme-based dioxygenases: Structure, function and dynamics*

**Syun-Ru Yeh,** Department of Biochemistry, Albert Einstein College of Medicine, New York, United States of America.

**10:10-10:35** *Structural insights into the functional properties of cytochrome c oxidase*

**Denis Rousseau,** Department of Biochemistry, Albert Einstein College of Medicine, New York, United States of America.

**10:35-11:00** *Cytochrome b5 reductase 4 efficiently reduces Neuroglobin and Cytoglobin*

**Jesús Tejero** Department of Medicine, University of Pittsburgh, Pittsburgh, USA

11:00-11:30 Morning Refreshments and Posters, EBS 2.65 & 2.66

**11:30-11:55** *Candida albicans Utilises Methaemoglobin to Build Ultra-Drug Resistant Polymicrobial Biofilms*

**Campbell Gourlay***,* School of Biosciences, University of Kent, Canterbury, United Kingdom

**11:55-12:55** *Abstract selected speakers:*

**11.55-12.10**The multiplicity of the Caenorhabditis elegans globin family.

**Bart Braeckman**, Biology Department, Ghent University, Belgium

**12.10-12.25***The enhanced hemoglobin function can be explained by additional tertiary structural changes exerted by changes in hydrophobicity in the α1β1 interface.*

**Antonio Tsuneshige**, Department of Frontier Bioscience and Research Center for Micro-Nano Technology, Hosei University, 3-11-15 Midori-cho, Koganei-shi, Tokyo 184-0003, Japan

**12.25-12.40**Characterization of globin Y in vertebrates.

**Cäcilia Plate,** Institute of Cell and Systems Biology of Animals, University of Hamburg, D-20146 Hamburg, Germany.

**12.40-12.55**Hemoglobin haem capture by staphylococcal receptor IsdB: a complex process unveiled by time-resolved X-ray solution scattering.

**Marialaura Marchetti,** Institute of Cell and Systems Biology of Animals, University of Hamburg, D-20146 Hamburg, Germany.

12:55-13:50 Lunch and Poster Session, EBS 2.65 & 2.66

**13:50-17:20 Session 4: Heme-proteins In Health and Diseases, EBS2.2**

**Chairpersons: David Hoogewijs, Brandon Reeder**

**13:50-14:15** *Cytoglobin in Hepatic Stellate Cells Plays an Anti-fibrotic Role in Chronic Liver Injury*

**Norifumi Kawada,** Department of Homeostatic Regulation and Liver Cancer Treatment, Graduate School of Medicine, Osaka Metropolitan University, Osaka, Japan

**14:15-14:40** *Targeting Nitric Oxide-Driven Cancer Progression: Hemin Derivatives Suppress Migration and Angiogenesis via Redox Pathway Modulation*

**Amir Abdo,** Research Ireland Centre for Medical Devices, University of Galway, Ireland.

**14:40-15:05** *Polymerised bovine Hb used as a perfusion fluid for organ preservation*

**Stefano Bruno,** Department of Food and Drug Sciences, University of Parma, Parma, Italy

**15:05-15:30** *Androglobin in basal metazoans: ancient functional association with cilia*

**Carina Osterhof,** Department of Endocrinology, Metabolism and Cardiovascular system, University of Fribourg, Fribourg, Switzerland.

15:30 - 16:00 Afternoon refreshments and Posters, EBS 2.65 & 2.66

**16:00 -16:25** *Cytoglobin as a mediator of non-canonical redox signaling*

**Jian Cui,** Helmholtz-Munich, Germany

**16:25 -16:50** *Cytoglobin controls cardiac morphogenesis by regulating NO-sGC signaling.*

**Paola Corti,** School of Medicine, University of Maryland, USA

**16:50 -17:35** *Abstract selected speakers:*

**16:50 -17:05** *Neuroglobin and Cytoglobin – Investigation of Functional role in the retina.* **Ranjan Rajendram.** University College, London, UK

**17:05 -17:20** *Cytoglobin: A potential respiratory regulator in retinal cells.*

**Alex Binderup Sort Jensen,** Section for Zoophysiology, Department of Biology, Aarhus University

**17:20 -17:35** *Heme Modulation of p53 and p63: Structural and Functional Insights.*

**Artur Sergunin***, Faculty of Science, Charles University, Hlavova 2030/8, 128 00, Prague, Czech Republic*

**19:30 – 21:30 Social Dinner, Wivenhoe House**

**Friday 29 August 2025**

09:00 - 09:20 Tea/Coffee, EBS 2.65 & 2.66

**09:20-13:00 Session 5: Emerging topics in oxygen binding/sensing proteins, EBS2.2**

**Chairpersons: Stefano Bruno**

**09:20-09:45** *Illuminating Heme Loss from Hemoglobin: New Fluorescent Tools to Track Heme-Iron Flow During Infection*

**Robert Clubb,** Department of Chemistry and Biochemistry, University of California, USA

**09:45-10:10** *Engineering heme stability in recombinant hemoglobin for the development of a prototype for stable hemoglobin based oxygen carrier*

**Suman** **Kundu,** Department of Biochemistry, University of Delhi, Delhi, India

**10:10-10:35** *Reengineering hemoglobin for safer synthetic oxygen therapeutics.*

**Brandon Reeder,** School of Life Sciences, University of Essex, United Kingdom

**10:35-11:00** *Molecular oxygen activation in the cofactor-less formyl glycine generating enzyme investigated using dose-resolved X-ray crystallography*

**Marina Lucic,** School of Life Sciences, University of Essex, United Kingdom

11:00-11:30 Morning Refreshments and Posters, EBS 2.65 & 2.66

**11:30-11:50***Remembering Professor Andrea Mozzarelli: A Life in Structure, Dynamics, and Function of Protein*

**Luca Ronda,**  Department of Medicine and Surgery, University of Parma, Italy

**11:50-12:50** *Abstract selected speakers:*

**11:50-12:05** *CRISPR/Cas9-mediated knockouts of globins 1, 2 and 3 in Drosophila melanogaster*

**Ruben Petry,** Molecular Genetics & Genome Analysis, iOME, Johannes-Gutenberg-University Mainz, Germany

**12:05-12:20** *Mapping myoglobin expression in epithelial tissues using a cross-tissue single-cell atlas.*

**Michelle Hagmaier,** Institute of Organismic & Molecular Evolution, Johannes Gutenberg University Mainz

**12:20-12:35** *Multi-Omics Analysis of Myoglobin Knockout Zebrafish Metabolism.*

**Ciska Bakkeren,** Zoophysiology, Department of Biology, Aarhus University, Aarhus, Denmark

**12:35-13:30 Closing Remarks and Poster/Oral Presentation Prizes**

* 1. **Close of Conference**

**14:00-16:00** *Practical workshop: Biophysical Methods for Studying Oxygen-Binding Heme Proteins (Limited numbers, sign-up sheet at registration desk* or EBS 2.65*)*