

Scientific Programme

Wednesday, 6 March 2024

13:00 – 14:00 *Registration*

14:00 -14:15 Opening and welcome

Rosa Martinez-Espinosa, University of Alicante, Spain

Opening session

Chair: **David Richardson**, University of East Anglia, United Kingdom

14:15 – 15:00 **Opening lecture:** Extracellular electron transfer: mechanisms and opportunities

Thomas Clarke, University of East Anglia, United Kingdom

Session 1: Extracellular and direct interspecies electron transfer

15:00 – 15:20 Interaction of living cable bacteria with carbon electrodes in bioelectrochemical systems

Kartik Aiyer, Aarhus University, Denmark

15:20 – 15:50 *Coffee break*

15:50 – 16:10 New insights into the mechanism of centimetre-scale electron transport in cable

Filip Meysman, University of Antwerp, Belgium

16:10 – 16:30 Evolution, distribution and engineering extracellular electron transfer in bacteria

Jeffrey Gralnick, University of Minnesota, USA

16:30 – 16:50 Periplasmic electron flux is coupled to proton translocation from the cytoplasm onto an extracellular halogenated electron acceptor in *Dehalococcoides mccartyi*

Lorenz Adrian, Helmholtz Centre for Environmental Research-UFZ, Germany

16:50 – 17:10 Microbial heme-tethered redox strings - a new class of cytochromes revealed by PgcA from *Geobacter sulfurreducens*

Leonor Morgado, UCIBIO, i4HB-Institute for Health and Bioeconomy, Portugal

17:10 – 17:30 Conductive cytoplasm membrane nanotubes in *Lysinibacillus varians* GY32

Yonggang Yang, Foshan University, China

17:30 – 17:50 Characterization of electron transfer chains in *Geobacter sulfurreducens*

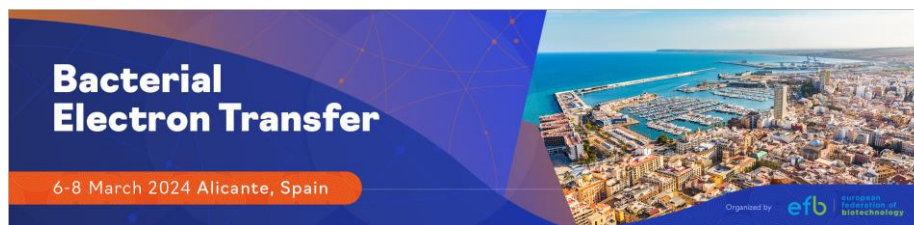
Américo G. Duarte, Universidade NOVA de Lisboa, Portugal

17:50 – 18:10 Understanding the biochemical mechanism of an autoproteolytic delivery pathway for extracellular redox enzymes

Benjamin Nash, University East Anglia, United Kingdom

18:10 – 18:25 Flash poster presentations

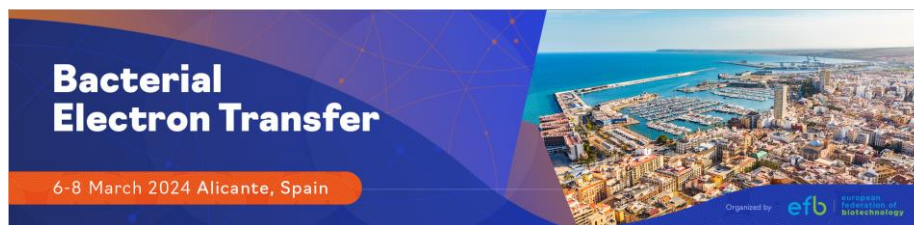
18:25 – 22:00 *Dinner and poster exhibition*



Thursday, 7 March 2024

Session 2: Electron transfer processes in biogeochemical cycles (I)

- 9:00 – 9:20 Electron bifurcating complexes in energy metabolism and aromatic compound degradation in *Geobacter sp*
Matthias Boll, Albert Ludwig University of Freiburg, Germany
- 9:20 – 9:40 Dual control of the *Bradyrhizobium diazoefficiens* RegSR regulatory system on norCBQD gene expression in response to oxygen
María Jesús Delgado, CSIC, Spain
- 9:40 – 10:00 The amazing microbiology of the biogeochemical chlorine cycle
John Coates, University of California, Berkeley, USA
- 10:00 – 10:20 Interpreting the MopB molybdoenzyme superfamily in the genomic era
Daan Speth, University of Vienna, Austria
- 10:20 – 10:40 The mosaicity of flavodiiron proteins: the role of the multiple domains in the intramolecular electron transfer and enzymatic activity
Filipe Folgosa, ITQB-Universidade Nova de Lisboa, Portugal
- 10:40 – 10:55 Flash poster presentations
- 10:55 – 11:30 *Coffee break*
- 11:30 – 11:50 Is your favourite sulfate reducer capable of sulfide oxidation?
Lea Emile Plum-Jensen, Aarhus University, Denmark
- 11:50 – 12:10 Electron competition between reduction pathways in denitrifying bacteria carrying N₂O reductase clade II
Alicia Caro-Pascual, Norwegian University of Life Sciences, Norway
- 12:10 – 12:30 Architecture of the NADH: ferredoxin oxidoreductase RNF1 from *Azotobacter vinelandii* that drives biological nitrogen fixation
Lin Zhang, Albert-Ludwigs-Universität Freiburg, Germany
- 12:30 – 13:30 *Lunch and poster exhibition*



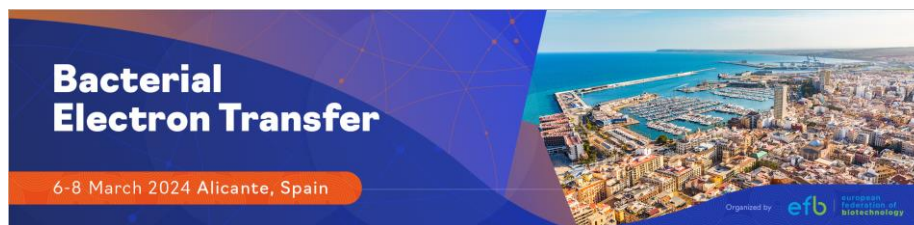
Thursday, 7 March 2024

Session 3: Electron transfer processes in biogeochemical cycles (II)

- 13:30 – 13:50 *Streptomyces coelicolor* spore-specific nitrate reductase 1 depends on the oxygen-respiring bcc-aa₃-supercomplex for its activity
Gary Sawers, Martin-Luther University Halle-Wittenberg, Germany
- 13:50 – 14:10 Molecular basis for the oxygen tolerance of the *Desulfovibrio vulgaris* FdhAB formate dehydrogenase
Inês Cardoso Pereira, ITQB NOVA, Portugal
- 14:10 – 14:30 Draw me an oxidoreductase that reacts with menaquinones: the case of the formate dehydrogenase ForCE from *Bacillus subtilis*
Axel Magalon, Institut de Microbiologie de la Méditerranée, France
- 14:30 – 14:50 Architecture of bacterial electron transport chains terminated by clade II nitrous oxide reductases
Jörg Simon, TU Darmstadt, Germany
- 14:50 – 15:10 Metalloenzymes from Pathogenic Bacteria
Sofia Pauleta, Nova University Lisbon, Portugal
- 15:10 – 15:30 Sulfate-reducing prokaryotes induced corrosion: Electron transfer from element iron to
Jizhou Duan, Institute of Oceanology, Chinese Academy of Sciences, China
- 15:30 – 16:00 *Coffee break*

Session 4: Handling stress and reactive oxygen and nitrogen species (I)

- 16:00 – 16:20 sNOR does not function as nitric oxide reductase in ammonia-oxidizing bacteria
Petra Pjevac, University of Vienna, Austria
- 16:20 – 16:40 Transmembrane signalling by fumarate sensor kinase DcuS: a piston-driven cytoplasmic PASC hinge
Gottfried Uden, Johannes Gutenberg University Mainz, Germany
- 16:40 – 17:00 Multiple roles for the electron transport chains of the enteric pathogen *Campylobacter jejuni* in respiration and detoxification
David Kelly, University of Sheffield, United Kingdom
- 17:00 – 17:20 RsuR, from the alpha-proteobacterium *Zymomonas mobilis*, regulates Fe-S cluster biogenesis
Isabel Askenasy, University of Wisconsin-Madison, USA
- 17:20 – 17:40 No oxygen, no stress? Exploring oxidative stress in anaerobic environments
Benjamin Ezraty, Institut de Microbiologie de la Méditerranée, France
- 17:40 – 18:00 Anaerobic biosynthesis of ubiquinone and O₂-independent hydroxylation
Rodrigo Arias Cartin, Institut Pasteur, Université Paris-Cité, France



Thursday, 7 March 2024

- 18:00 – 18:20 The role of AAA-ATPase RavA-ViaA complex in respirator chains
Frédéric Barras, Institut Pasteur, France
- 18:20 – 19:30 Poster exhibition
- 20:00 – 22:30 *Gala dinner and networking evening*

Friday, 8 March 2024

Session 5: Dehydrogenases, oxidases and quinones

- 9:00 – 9:20 Energy coupling in *Escherichia coli* complex I
Luca Mérono, Albert-Ludwigs-University, Germany
- 9:20 – 9:40 Function of the isolated CIV from the obligate respiratory supercomplex (CIII2CIV2SOD2) from *Mycobacterium smegmatis*
Jóhanna Vilhjálmisdóttir, Stockholm University, Sweden
- 9:40 – 10:00 Structure, cofactor composition and mechanism of electron and Na⁺ transport of the Rnf complex from *Acetobacterium woodii*
Jennifer Roth, Goethe-Universität Frankfurt, Germany
- 10:00 – 10:20 Diversity of quinones in *Pseudomonadota*: focus on ubiquinone biosynthesis and physiology of under anaerobic conditions
Fabien Pierrel, CNRS-Université Grenoble Alpes, France
- 10:20 – 10:40 Cytochrome c-dependent nitric oxide reductase is activated by a pair of chaperone proteins
Sofia Appelgren, Stockholm University, Sweden
- 10:40 – 11:00 Characterization and comparison of the oxidoreductase activity of cytochrome bd-I and bd-II oxidases from *Mycobacterium smegmatis*
Mateusz Janczak, Stockholm University, Sweden
- 11:00 – 11:30 *Coffee break*

Session 6: Handling stress and reactive oxygen and nitrogen species (II)

- 11:30 – 11:50 Transcription circuits that respond to electron transfer stress
Timothy Donohue, University of Wisconsin-Madison, USA
- 11:50 – 12:10 L-arginine sensing reprograms the energy metabolism of *P. putida*
Simone Angeli, Sapienza University of Rome, Italy
- 12:10 – 12:30 Interactions between G-quadruplex DNA and hemin structures induce staphylococcal biofilm tolerance to hemin toxicity and electroactivity
Obinna Ajnuwa, Aarhus University, Denmark



Closing session

Chair: **Jeff Cole**, University of Birmingham, United Kingdom

12:30 – 13:15 **Closing lecture:** Dawn is breaking: electron transfer and its regulation during dissimilatory sulfur oxidation

Christiane Dahl, University of Bonn, Germany

13:15 – 13:30 Closing words

Rosa María Martínez-Espinosa, University of Alicante, Spain