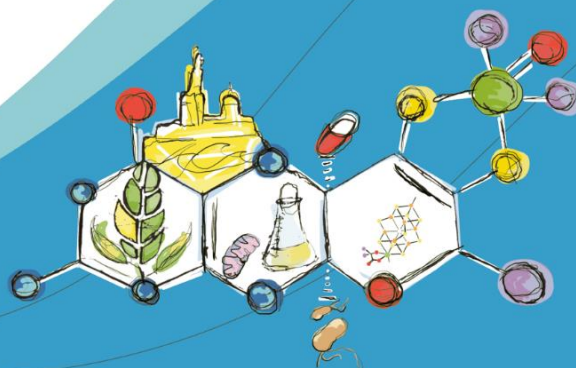


MOTEC 2021

12th Molybdenum and Tungsten Enzymes Conference

September 27th - October 1st



Monday, 27 September 2021

CEST

15:00-15:15

Welcome message

Chair: **Partha Basu**

15:15-16:00

Opening lecture - **Russ Hille**, University of California, USA
How we got to now: recent progress in Mo and W enzymes

16:00-16:25

Martin L. Kirk, University of New Mexico, USA
The molybdenum cofactor, cofactor sulfuration, and Mo-sulfido contributions to C-H bond activation

16:25-16:50

Nadia C. Mösch-Zanetti, University of Graz, Austria
Nucleophilic attack on acetylene in biomimetic tungsten and molybdenum complexes

16:50-17:10

Coffee break

Chair: **Bruno Guigliarelli**

17:10-17:30

Matthias Boll, University of Freiburg, Germany
Structure and function of a 1 MDa, electron-bifurcating, and tungstopterin containing benzene ring reductase

17:30-17:50

Agnieszka Winiarska, Polish Academy of Sciences, Poland
*A new type of hydrogenase - tungsten aldehyde oxidoreductase from *Aromatoleum aromaticum**

17:50-18:15

Flash posters

Soniya Ahammad/Madeleine Ehweiner/Filipa Engrola/Mikayla Metzger

18:15-19:45

Poster session & Meet the experts (**Partha Basu** and **Sharon Burgmayer**)

Tuesday, 28 September 2021

CEST

Chair: **Vincent Fourmond**

- 14:00-14:25 **Ulrike Kappler**, The University of Queensland, Australia
S-oxide reductases as determinants of bacterial fitness and pathogenicity
- 14:25-14:50 **Stéphane Grimaldi**, Aix-Marseille University, France
*Reaction mechanism of sulfite oxidizing enzymes: a combined structural and spectroscopic study of *Thermus thermophilus* sulfite dehydrogenase*
- 14:50-15:10 **François Feron**, Aix-Marseille University, France
Autism: what's wrong with molybdenum enzymes?
- 15:10-15:30 **Tamaki Suganuma**, Stowers Institute for Medical Research, USA
MOCS2 links purine metabolism to nucleoli function
- 15:30-15:45 Coffee break

Chair: **Russ Hille**

- 15:45-16:05 **Sharon Burgmayer**, Bryn Mawr College, USA
Exploring model complexes with pyranopterin dithiolene ligands: consequences of pterin methylation
- 16:05-16:25 **Jin Yang**, The University of New Mexico, USA
Addressing ligand-based redox in molybdenum-dependent methionine sulfoxide reductase
- 16:25-16:45 **Henrique S. Fernandes**, Universidade do Porto, Portugal
Exploring the nitrate and nitrite reductase activity of xanthine oxidase – a QM/MM study
- 16:45-17:00 Coffee break

Chair: **Barbara Schoepp-Cothenet**

- 17:00-17:20 **Filipa L. Sousa**, University of Vienna, Austria
Diversity and distribution of Moco-complexes within prokaryotes
- 17:20-17:40 **John F. Stolz**, Duquesne University, USA
The respiratory selenite reductase and the evolution of the DMSO reductase family of enzymes
- 17:40-18:10 Flash posters
Malin Eh/Constanze Pinske/Thomas Reed/Anna Rovaletti
- 18:10-19:30 Poster session & Meet the experts (**Martin Kirk** and **Ines Pereira**)

Wednesday, 29 September 2021

CEST

Chair: **Silke Leimkühler**

- 15:00-15:25 **Günter Schwarz**, University of Cologne, Germany
Maturation, function, and deficiencies of mitochondrial sulfite oxidase
- 15:25-15:50 **Inês A. C. Pereira**, Universidade Nova de Lisboa, Portugal
*Spectroscopic and structural studies of the W-dependent formate dehydrogenase from *Desulfovibrio vulgaris* Hildenborough*
- 15:50-16:10 **Ulf Ryde**, Lund University, Sweden
Computational studies of nitrogenase
- 16:10-16:30 **Zhi-Yong Yang**, Utah State University, USA
The electronic structure of FeV-cofactor in vanadium-dependent nitrogenase

16:30-16:50 Coffee break

Chair: **Luisa Maia**

- 16:50-17:10 **Anne Walburger**, Aix-Marseille University, France
Identification and characterization of a non-canonical menaquinone-linked formate dehydrogenase
- 17:10-17:30 **Olivier Lemaire**, MPI for Marine Microbiology, Germany
Capturing or releasing CO₂: how do methanogenic archaea orient their tungsto/molybdoenzymes reaction?

17:30-18:00 Flash posters

Ahmed Hassan/Joern Krausze/Nevena Maslac/Maria Reichenbach

18:00-19:30 Poster session & Meet the experts (**Günter Schwarz** and **Silke Leimkühler**)

Thursday, 30 September 2021

CEST

Chair: **Sharon Burgmayer**

- 15:00-15:25 **Bernd Clement**, University of Kiel, Germany
The Mitochondrial Amidoxime Reducing Component (mARC): from a prodrug activating enzyme over a drug metabolizing catalyst to a drug target
- 15:25-15:50 **Silke Leimkühler**, The University of Potsdam, Germany
Exploring the functional versatility of the molybdenum cofactors by their insertion into molybdoenzymes
- 15:50-16:10 **Kurt Warnhoff**, Sanford research, USA
*Molybdenum cofactor transfer from bacteria to the nematode *C. elegans**
- 16:10-16:30 **Thomas W. Hercher**, Technical University of Braunschweig, Germany
Re-assessing the dynamics of Moco biosynthesis in a yeast engineered to synthesize Moco

16:30-16:50 Coffee break

Chair: **Ralf Mendel**

- 16:50-17:10 **Markus Ribbe**, University of California, USA
Tracing the incorporation of the "9th Sulfur" into the nitrogenase cofactor precursor with selenite and tellurite
- 17:10-17:30 **Yilin Hu**, University of California, USA
Evidence of substrate binding and product release via belt-sulfur mobilization of the nitrogenase cofactor

17:30-18:00 Flash posters

Gregor Blaha/Marta Meneghello/Ana Rita Oliveira/Alexandre Uzel

18:00-19:30 Poster session & Meet the experts (**Markus Ribbe** and **Ralf Mendel**)

Friday, 1 October 2021

CEST

Chair: **Günter Schwarz**

- 15:00-15:25 **Betül Kaçar**, University of Arizona, USA
Elucidating the origin and evolution of nitrogenases: Implications for early life and environment
- 15:25-15:50 **Partha Basu**, IUPUI, USA
Kinetic control of endogenous ligation to molybdenum in DMSOR family
- 15:50-16:10 **Cristiano Mota**, Universidade Nova de Lisboa, Portugal
The inhibition mechanisms of human aldehyde oxidase by STD-NMR and X-ray crystallography
- 16:10-16:30 **Kenichi Yokohama**, Duke University, USA
Mechanism of carbon skeleton formation in the molybdenum cofactor biosynthesis

16:30-16:50 Coffee break

Chair: **Axel Magalon**

16:50-17:35 Closing lecture – **Ralf R. Mendel**, Technical University of Braunschweig, Germany
Quo vadis molybdenum enzyme research?

17:35-17:50 Closing remarks