

# BioMETALS X

10<sup>th</sup> International BioMetals Symposium 2016

July 10 –15, 2016 | art'otel | Dresden, Germany



## PROGRAM

Organized by Institute of Resource Ecology | Helmholtz-Zentrum Dresden-Rossendorf



International  
Biometals  
Society

**HZDR**



[www.hzdr.de/biometals2016](http://www.hzdr.de/biometals2016)

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# Preface

Dear Colleagues,

It is with great pleasure that we welcome you to the 10<sup>th</sup> International BioMetals Symposium, BioMetals 2016 in Dresden. The 2016 International Conference on BioMetals is a member in a series of conferences organized since 1997, the first one taking place in Calgary, Canada. The tenth conference will be organized by the HZDR in Dresden, the capital of Saxony. 115 international colleagues from over 22 countries on 5 continents will participate. The conference format consists of 13 invited lectures, 61 contributed short talks, and over 36 posters. As always in the BioMetals conference series, our interdisciplinary theme is the exploration of metals in biology, medicine and the environment. BioMetals 2016 offers several sub-themes: Coordination Chemistry and Environmental Issues, Acquisition, Signaling and Diseases, Metal Transport, Zinc and Iron, Metals and Regulation, Redox of Metals, Sensors, Plants and Eukaryotes, Toxicity, Defense. A special focus in Dresden will be given to "Radionuclides". Furthermore, a "Young Scientists Session" will be included for the first time.

We thank Pierre Cornelis, Günther Winkelmann, Al Crumbliss, Larry Barton, Manuel Lemos, Wolfgang Maret, Christopher Rensing, Frank Thévenod and Hans J. Vogel from the International Scientific Committee, for their advice in designing the scientific program. We are grateful for the administrative assistance of Andrea Witschel and Heike Dürichen from Intercom for her dedication and skill in synchronizing all aspects of this conference. We greatly appreciate financial assistance from our corporate sponsors, whose names are listed in the program. Most importantly, we thank you for your participation in making BioMetals 2016 a successful conference.



Prof. Dr. Thorsten Stumpf

Director of the Institute of Resource Ecology



Dr. Gerhard Geipel

Organizing Committee

# General Information

## Scientific Committee

Pierre Cornelis  
Günther Winkelmann  
Alvin Crumbliss  
Larry Barton  
Manuel Lemos  
Wolfgang Maret  
Christopher Rensing  
Frank Thévenod  
Hans J. Vogel

## Organizing Committee

Gerhard Geipel  
Astrid Barkleit  
Andrea Cherkouk  
Susanne Sachs

## Sponsors

We want to give special thanks to Lidia Crosa for her generous financial support.



# General Information

## Registration desk

The registration desk is located close to the session room.

Each BioMetals participant will receive a symposium kit upon registration.

The registration fee comprises

- Admissions to all sessions, poster periods and program.
- All the meals, refreshment breaks and get together at the hotel.
- Name badge, please wear the badge to all symposium occasions.

## Opening hours

Sunday, July 10 <sup>th</sup> , 2016	15:00 – 20:30
Monday, July 11 <sup>th</sup> , 2016	07:30 – 18:00
Tuesday, July 12 <sup>th</sup> , 2016	07:30 – 21:00
Wednesday, July 13 <sup>th</sup> , 2016	07:30 – 14:00
Thursday, July 14 <sup>th</sup> , 2016	07:30 – 17:00
Friday, July 15 <sup>th</sup> , 2016	07:30 – 12:00
telephone registration desk	+49 (0) 160 744 0002   Heike Dürichen +49 (0) 160 744 0028   Andrea Witschel

## Internet Access

Wireless is available throughout the symposium. The access is for free.

## Instructions for Presentations

Speakers are asked to upload their presentation until 08:00 on the day of their presentation at the media check. The media check is located in the rear area of the session room. There will be help to check the correct view of the presentation. Time allocated for invited speakers is 30 min, unless other time is allowed. For presentations Powerpoint ppt(x) or Adobe pdf are possible.

Poster dimension should not exceed A0 size (87 cm x 124 cm, 35 inch x 48 inch) and should be in portrait format. There will be only one poster session. However, the posters can be presented during the whole conference. They should be removed until Thursday, July 14<sup>th</sup>, 2016, 10:00.

## Lunch and Refreshments

Lunch buffets will be provided for participants of the conference and accompanying persons, who have paid a special rate from Monday to Friday. Refreshments will be served during the breaks and poster session on Tuesday evening.

# General Information

## Get together

On Sunday evening 18:30 a "Get together" will be held in the hotel lobby. At 19:30 an evening lecture will be given by A. Baker; Australia.

## Excursion

The excursion by steamboat to Pillnitz will be on Wednesday afternoon. Please walk from the hotel about 20 minutes (1.3 km) to "Terrassenufer". In addition a guide will wait at 13:15 in the lobby of the art'otel to guide you to the steamboat.

The steamboat starts at 14:00. Please be about 10 minutes before departure at the landing place. The steamboat takes the route upstream to Pillnitz. You will have nice views to the landscape. Arrival in Pillnitz will be about 2 hours later. We leave the boat and have a guided tour through the garden of the castle. At around 17:00 you will drive with busline nr. 63 back to the city. You may end the day in one of traditional beer gardens (see list at the registration desk or at page 6).

## Conference Dinner

The conference dinner on Thursday, July 14, 2016 will be organized in Hotel "Schloss Eckberg", Dresden, Bautzner Str. 134. It starts at 19:30 to arrive at the hotel please plan about 30 minutes from the conference hotel. A bus will bring you from the conference hotel to "Schloss Eckberg". The departure is at 18:45. We will meet us in the lobby of art'otel. The way back you may use again the bus (departure 23:00 at "Schloss Eckberg"). If you want to leave earlier you may use tram (nr. 11) from stop "Elbschlösser".

## Program for accompanying person

We offer several possibilities to visit the city and its places of interest. Please ask at the registration desk. We will try to match your individual interests. It will be possible to order tickets for most of the art exhibitions and galleries. Please ask at least one day before. There is only one exception: The "Historical Green Vault", the treasure of the Saxonian Kings, can be only visited after preordering. If you want to visit this, we will order for you in advance. In addition it will be possible to arrange more or less individual sightseeing tours to places nearby Dresden, as a trip to Meissen (porcelain), Moritzburg (hunting castle) or Saxonian/Bohemian Switzerland (walking trip). Please let us know your wishes.

## Public Transport

Dresden has a good system of public transportation. There is a tram and bus system, which can bring you to all places in the town. For help please ask at the registration desk. Left of the conference hotel is the tram station "Kongresszentrum" of tram nr. 11, which can be used to the main railway station "Dresden-Hauptbahnhof" and station "Dresden-Neustadt". From and to the airport you may use the local train S2. Leave/enter the train at "Dresden-Mitte", about 16 min after departure. From this train station the conference hotel is within walking distance (450 m; 5 min). A single ticket is 2.30 €. For assistance please ask at the registration desk.

# General Information

## Restaurants

Around the hotel you can find several restaurants for dinner. Please have a look in the Internet or on the attached list: <http://www.dresden-tourismus.de/restaurants.html>

### around art'otel

Factory restaurant & Bar, Ostra-Allee 33

Maxismus, Maxstraße 5

Sushi & Wine, Maxstraße 1

Mongolian Bar, Schützenplatz 14

(Modern style)

(Japanese cuisine)

(Asian cuisine)

### City (around Frauenkirche)

Kutscherschänke, Münzgasse 10

Ayers Rock, Münzgasse 8

Las Tapas, Münzgasse 4

Edelweiss, An der Frauenkirche 7

Ontario, An der Frauenkirche 2

Coselpalais, An der Frauenkirche 12

Pulverturm, An der Frauenkirche 12

Dresden 1900, An der Frauenkirche 20

Classico Italiano, An der Frauenkirche 20

(Local cuisine)

(Australian cuisine)

(Spanish cuisine)

(Swiss cuisine)

(Canadian Steakhouse)

(French-German cuisine)

(Saxonian cuisine; vault restaurant)

(German cuisine, historical ambience)

(Italian cuisine)

and many more

## Legend

1. art'otel dresden – conference venue

## museums & galleries

2. Messe Dresden
3. Gemäldegalerie Alte Meister
4. Grünes Gewölbe
5. Albertinum
6. Verkehrsmuseum

## culture

7. Zwinger
8. Semperoper
9. Brühlsche Terrasse
10. Fürstenzug
11. Frauenkirche
12. Altmarkt
13. Gläserne Manufaktur
14. Residenzschloss
15. Kathedrale St. Trinitatis
16. Kunstakademie

## shopping

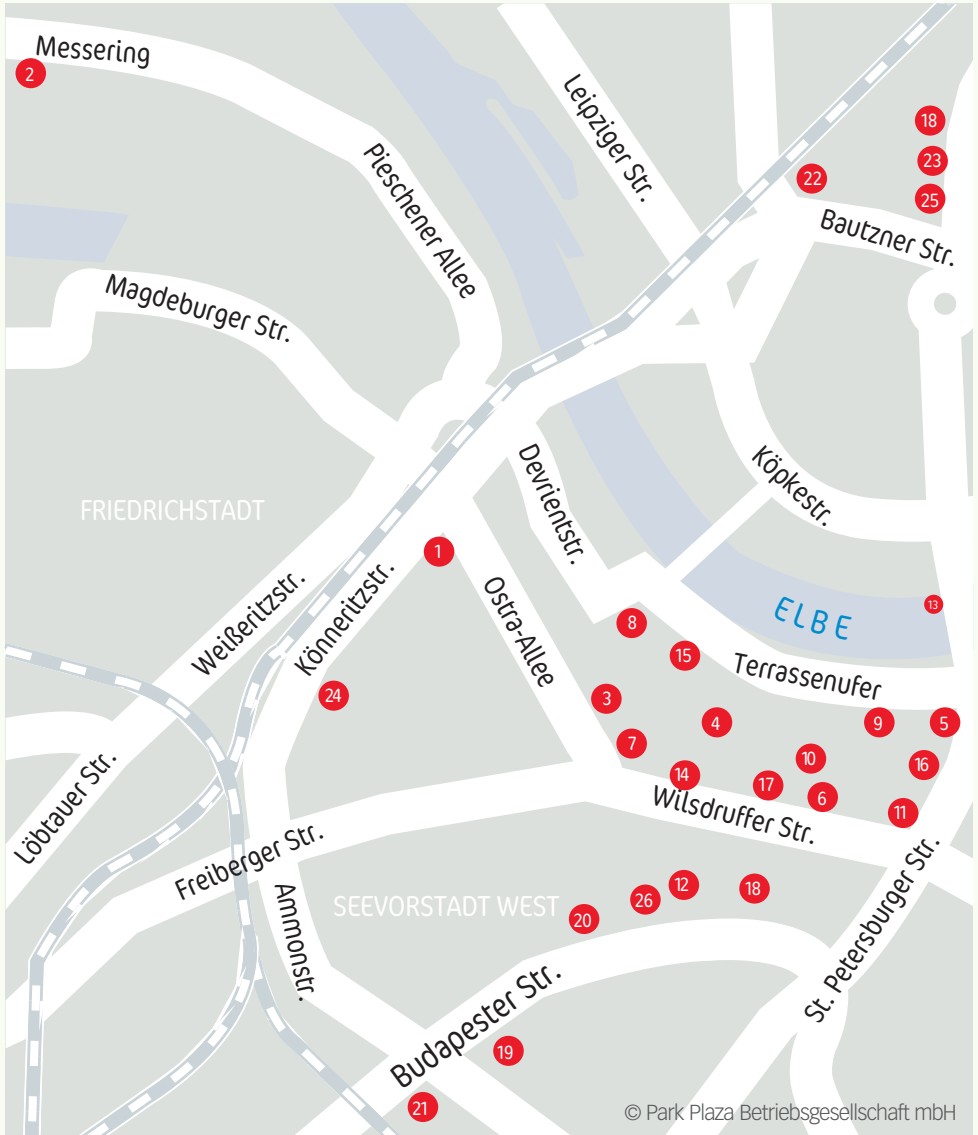
17. Neumarkt
18. Altmarkt-Galerie
19. Wiener Platz
20. Prager Straße
21. Kunsthof-Passage

## night life

22. Neustadt
23. Katy's Garage
24. Kraftwerk Club
25. Groovestation
26. Blue Dance Club



# General Information



## Disclaimer

The organizers are not liable for damages and/or losses of any kind which may be incurred by the Symposium delegates or by any other individuals accompanying them, both during the official activities as well as going to/from the Symposium. Delegates are responsible for their own safety and belongings.

# Scientific Program

**Sunday, July 10<sup>th</sup>, 2016**

19:30 Evening Lecture

**Metallophytes: a biodiversity and phytotechnological resource  
for soil clean-up, phyto-/agromining and mine site restoration**

(Invited)

A. Baker, Australia

# Scientific Program

**Monday, July 11<sup>th</sup>, 2016**

08:30 **Welcome**

*Roland Sauerbrey*

Scientific Director Helmholtz-Zentrum Dresden-Rossendorf

*Thorsten Stumpf*

Director Institute of Resource Ecology

*Pierre Cornelis*

President of IBS

## **Session 1: Coordination Chemistry and Environmental Issues**

*Chair: P. Cornelis, L. Barton*

08:50 **Coordination Chemistry of Microbial Iron Transport** (Invited)

K. Raymond, USA

09:30 **A Copper chaperone protein that features an unusual high-affinity Cu(II) binding site: CopC from *Pseudomonas fluorescens* SBW25**

Ch. J. K. Wijekoon, T. R. Young, A. G. Wedd, Z. Xiao, Australia

09:50 **Unique features of the copper binding components in canine blood plasma**

M. C. Linder, S. Flynn, M. Tellez, K. Kim, T. Alsky, S. Weldy, H. Fieten, S. Lutsenko, USA

10:10 **From symbiosis to biotechnology: The metal ion-inducible autocleavage domain**

J. Schirrmeister, S. Ibe, E. Hoyer, M. Liebmann, S. Zehner, K. Fahmy, M. Göttfert, Germany

10:30 Break

## **Session 2: Radionuclides**

*Chair: T. Stumpf, K. Raymond*

10:50 **Engineering of recombinant EF-hand peptides for the selective binding of radionuclides** (Invited)

C. Berthomieu, R. Pardoux, S. Sauge-Merle, M.-R. Beccia, D. Lemaire, J. Pansier, C. Battesti, N. Bremond, P. Guilbaud, M. Merroun, P. L. Solari, P. Delangle, F. Brulfert, P. Simoni, S. Safi, France

11 :20 **Spectroscopic studies on the interaction of europium(III) and curium(III) with components of the human mucosa**

C. Wilke, A. Barkleit, A. Ikeda-Ohno, T. Stumpf, Germany

# Scientific Program

- 11:40 **Mechanism of attenuation of uranyl toxicity by glutathione in *Lactococcus lactis***  
K. Fahmy, M. Obeid, J. Oertel, M. Solioz, Germany
- 12:00  **$\gamma$ -spectrometric and laser spectroscopic investigations on the uptake of  $^{243}\text{Am}$  in (plant) cells**  
A. Wunnenberg, M. Steppert, A. Ngezahayo, C. Walther, Germany
- 12:20 **Phytoremediation of radioactively contaminated water**  
N. Vanhoudt, P. Janssen, D. Bollen, R. Nauts, Belgium
- 12:40 Lunch Break
- Session 3: Signaling, Diseases and Acquisition**  
Chair: J. Lloyd, M. Kumke
- 13:40 **Further characterisation of the Ni(II)-sensor InrS and the effect of adjusting  $K_{\text{Ni(II)}}$  (Invited)**  
N. Robinson, United Kingdom
- 14:10 **Improving the efficiency of iron chelators using nanotechnology**  
G. J. Anderson, S. Guo, M. Liu, G. Liu, G. Nie, Australia
- 14:30 **Regulation of iron-citrate uptake in *Escherichia coli***  
S. Paul, H. J. Vogel, Canada
- 14:50 **Molybdenum enzymes and organosulfur compound metabolism in the human pathogen *Haemophilus influenzae***  
R. Dhoub, Dk S. M. Pg Othman, N. M. Muda, H. J. Schirra, A. G. McEwan, U. Kappler, Australia
- 15:10 **Non-transferrin bound iron is elevated in sera of liver cirrhosis patients**  
Chr. Graf, H.-D. Riedel, W. Stremmel, U. Merle, Germany
- 15:30 ***Porphyrromonas gingivalis* virulence mechanisms are triggered through Fur homologue under iron and haem limited conditions**  
M. Smiga, J. Ciuraszkiwicz, M. Bielecki, M. Olczak, P. Niedzwiecki, T. Olczak, Poland
- 15:50 Break
- Session 4: Signaling, Diseases and Acquisition (cont.)**  
Chair: G. Anderson, M. Solioz
- 16:10 **Conjugation of an *Acinetobacter* selective siderophore to the Gram-positive active only antibiotic, Daptomycin, generates a Sideromycin (Sidapto) with potent activity against Gram-negative *Acinetobacter baumannii***  
M. J. Miller, M. Ghosh, P. A. Miller, U. Möllmann, USA

# Scientific Program

- 16:30 **Search for the mechanism of the development of necrotic regions from Zn-hyperaccumulating mesophyll cells within leave blades**  
A. Weremczuk, D. M. Antosiewicz, Poland
- 16:50 **The role of Pht proteins in pneumococcal zinc acquisition**  
V. G. Pederick, B. A. Eijkelkamp, C. D. Plumptre, R. M. Harvey, C. E. Hughes, J. R. Morey, S. L. Begg, C. A. McDevitt, J. C. Paton, Australia
- 17:10 **The identification of a Zur-regulated TonB-dependent Outer Membrane Protein involved in zinc uptake reveals that zinc has a key role in *Pseudomonas aeruginosa* infections**  
M. Ch. Mastropasqua, M. D'Orazio, M. Cerasi, S. Ammendola, A. Gismondi, A. Canini, B. Chirullo, P. Pasquali, A. Battistoni, Italy
- 17:30 **Antioxidant desferrioxamine B analogues in Parkinson's disease**  
M. P. Gotsbacher, D. Finkelstein, R. Codd, Australia
- 17:50 End

# Scientific Program

Tuesday, July 12<sup>th</sup>, 2016

## Session 5: Metal Transport I

Chair: F. Thévenod, Chr. Rensing

- 08:30 **The root endodermis acts as a gateway for solute transport to the shoot** (Invited)  
D. Salt, United Kingdom
- 09:00 **Getting the iron out: Fe release from ferric binding protein - FbpA**  
R. Bangle, A. Weerasinghe, R. T. Kreulen, C. J. P. Siburt, A. L. Crumbliss, USA
- 09:20 **Acquisition of copper resistance by the bacterial pathogen *Pseudomonas syringae* pv *actinidae***  
M. Butler, I. L. Lamont, R. T. M. Poulter, New Zealand
- 09:40 **The ZIP transporter ZupT and the Zinc repository of *Cupriavidus metallidurans***  
M. Herzberg, L. Bauer, D. Dobritzsch, S. Helm, S. Baginski, D. H. Nies, Germany
- 10:00 **Crystal structures of novel heme binding domains in *Corynebacterium glutamicum* HtaA and HmuT responsible for heme uptake**  
S. Aono, N. Muraki, Japan
- 10:20 **Homologs of *Porphyromonas gingivalis* HmuY from *Prevotella intermedia* and *Tannerella forsythia* bind heme but in a manner different to hemophore-like HmuY-protein**  
M. Bielecki, J. W. Smalley, M. Smiga, K. Sieminska, P. Stepień, P. Niedzwiecki, M. Olczak, T. Olczak, Poland

10:40 Break

## Session 6: Zinc and Fe

Chair: N. Verbruggen, N. Horemans

- 11:00 **Cellular Zinc homeostasis in Diabetes Type 2** (Invited)  
W. Maret, C. Hogstrand, United Kingdom
- 11:30 **Is Frataxin involved in metal homeostasis other than Iron?**  
N.-T. Ha Duong, T.-H.-L. Han, J.-M. Camadro, J.-M. El Hage Chahine, France
- 11:50 **Characterization of *Sodalis glossinidius* heme iron acquisition and homeostasis genes**  
L. J. Runyen-Janecky, B. Chen, S. Kube, T. Arena, L. Szeto, E. Jedel, F. Biville, B. Weiss, S. Aksoy, USA
- 12:10 **Two binding proteins are better than one: characterising the roles of AdcA and AdcAll in zinc acquisition by *Streptococcus pneumoniae***  
J. R. Morey, B. A. Eijkelkamp, Z. Luo, C. D. Plumtre, B. Kobe, R. M. Couñago, M. L. O'Mara, J. C. Paton, C. A. McDevitt, Australia

# Scientific Program

- 12:30 Lunch Break
- Session 7: Metals and Regulation**  
*Chair: D. Nies, D. Salt*
- 13:30 **Protein Interactions that Facilitate Copper Ion Transport in the Human Cytoplasm** (Invited)  
P. Wittung-Stafshede, Sweden
- 14:00 **Why copper surfaces are antibacterial**  
M. Solioz, M. Hans, F. Mücklich, Switzerland
- 14:20 **Metal-specific control of gene expression mediated by *Bradyrhizobium japonicum* Mur and *Escherichia coli* Fur is determined by the cellular context, not by intrinsic properties of the proteins**  
Mark R. O'Brian, USA
- 14:40 **Sourcing novel drugs by the enzymatic fragmentation of natural products**  
T. Richardson-Sanchez, W. Tieu, R. Codd, Australia
- 15:00 **Citrate acts as siderophore for the marine pathogen *Photobacterium damselae* subsp *damselae***  
M. Balado, B. Puentes, L. Couceiro, J. C. Fuentes-Monteverde, J. Rodríguez, C. Jiménez, M. L. Lemos, Spain
- 15:20 Break
- Session 8: Redox of Metals (non Fe)**  
*Chair: C. Berthomieu, A. Crumbliss*
- 15:40 **Microbe-radionuclide redox interactions: Extending the biobarrier concept from contaminated land to geodisposal** (Invited)  
J. Lloyd, United Kingdom
- 16:10 **Cisplatin-induced changes in thiol reactivity: linking metal binding to redox chemistry**  
G. Weber, R. Zabel, Germany
- 16:30 **Bismuth(III)-deferiprone inhibition of sulfate-reducing bacteria**  
L. L. Barton, A. S. Granat, N. L. Ritz, D. A. Lyle, A. N. Khurshid, N. Kherbik, R. Hider, H. C. Lin, USA
- 16:50 **Reduction of Uranium(VI) by isolated, anaerobic microorganisms from the flooding water of the former uranium mine Königstein (Saxony/Germany)**  
U. Gerber, E. Krawczyk-Bärsch, A. C. Scheinost, T. Arnold, Germany

# Scientific Program

- 17:10 **Enzymatic reduction of Se (IV) by *Stenotrophomonas* sp. BII-R7 under aerobic and anaerobic conditions: multidisciplinary approach study**  
M. A. Ruiz-Fresneda, J. Gómez-Bolívar, I. Sánchez-Castro, M. L. Merroun, Spain
- 17:30 **Functional interaction between frataxin and oxidative stress control proteins**  
T.-H.-L. Han, J. M. Camadro, J. M. El-Hage-Chahine, N. T. Ha-Duong, France
- 17:50 **MbfA, an Iron Export System in *Brucella* Providing a Novel Iron-mediated Mechanism for Resistance Against the Immune System**  
C. Moon, P. Ireland, M. Lindars, J. T. M. Lewis, L. M. Wynne, E. Pohl, K. A. Karatzas, J. M. East, H. Atkins, S. C. Andrews, United Kingdom
- 18:10 Break
- 18:30 **Poster Session**
- 21:30 End



# Scientific Program

**Wednesday, July 13<sup>th</sup>, 2016**

## Session 9: Sensors

*Chair: N. Robinson, K. Fahmy*

- 08:30 **Lanthanides and optical sensing** (Invited)  
K. Burek, S. Eidner, D. Klier, M. U. Kumke, Germany
- 09:00 **Synthesis of fluorescent iron oxide nanoparticles for cell uptake studies**  
W. Rastedt, R. Dringen, Germany
- 09:20 **Biogenic selenium nanoparticles: resource or by-products?**  
L. C. Staicu, L. L. Barton, France
- 09:40 **Correlative Microscopy – Combine to see more!**  
J. Lindenau, Germany

10:00 Break

## Session 10: Young Scientist Session

*Chair: A. Cherkouk, A. Barkleit*

- 10:20 **Zinc trafficking in *Cupriavidus metallidurans***  
L. Bauer, M. Herzberg, St. Helm, D. Dobritzsch, D. H. Nies, Germany
- 10:40 **An adequate zinc supply is required for the optimal expression of *Pseudomonas aeruginosa* virulence features**  
M. Ch. Mastropasqua, M. D’Orazio, A. Battistoni, Italy
- 11:00 **PmtA is a PerR-regulated ferrous iron efflux system of group A *Streptococcus***  
A. G. Turner, C. Y. Ong, A. G. McEwan, M. J. Walker, Australia
- 11:20 **Multistage uranium bioassociation kinetics of two *Halobacterium noricense* strains under highly saline conditions**  
M. Bader, K. Müller, H. Foerstendorf, J. Swanson, A. Cherkouk, Germany
- 11:40 **Comparative genomics and functional analysis of copper adaptation in *Pseudomonas fluorescens* group**  
Y. N. Qin, K. K. Brandt, Chr. Rensing, Denmark
- 12:00 Break
- 12:00 **Board of Directors** (closed session, including lunch)
- 14:00 **Excursion** (13:15 Meeting point in hotel lobby)

# Scientific Program

Thursday, July 14<sup>th</sup>, 2016

## Session 11: Plants and Eukaryotes

Chair: A. Baker, U. Tinggi

- 08:30 **Metal hyperaccumulation in plants: Novel insights from genome-wide and targeted molecular approaches** (Invited)  
U. Krämer, Germany
- 09:00 **Use of a biotic ligand model (BLM) to predict toxicity to the freshwater macrophyte *Lemna minor* exposed to uranium or to a mixture of uranium and cadmium**  
N. Horemans, M. Van Hees, C. Willrodt, T. Turtiainen, H. Vandenhove, S. Lofts, Belgium
- 09:20 **Molecular elucidation of Pb tolerance and accumulation in *Arabidopsis thaliana* and the metal hyperaccumulator species *A. halleri***  
S. Clemens, S. Höreth, S. Fischer, P. Pongrac, Germany
- 09:40 **Characterization of *FRD3*, a zinc and iron homeostasis actor in *Arabidopsis* relatives**  
M. Scheepers, J. B. Charlier, J. Spielmann, P. Motte, M. Hanikenne, Belgium
- 10:00 **Thesiderophorecorrugatin and newly described analogues are only produced by plant-associated *Pseudomonas* strains**  
S. Matthijs, N. Brandt, M. Ongena, H. Budzikiewicz, W. Achouak, Belgium
- 10:20 Break

## Session 12: Toxicity

Chair: U. Krämer, W. Maret

- 10:40 **CAX1 co-segregates with Cd tolerance in the metal hyper-accumulator *Arabidopsis halleri* and CAX1 is involved in Ca-dependent limitation of oxidative stress** (Invited)  
N. Verbruggen, C. Baliardini, C.-M. Meyer, M. Corso, Belgium
- 11:10 **Selenium distribution in rat tissues after supplementation with high dietary levels of selenite, methylselenocystiene and selenomethionine**  
U. Tinggi, Australia
- 11:30 **New insights into the mechanisms of Cu toxicity and tolerance in *Escherichia coli***  
K. Y. Djoko, M. J. Walker, M. A. Schembri, A. G. McEwan, Australia
- 11:50 **Copper accumulation and toxicity after application of copper oxide nanoparticles to C6 glioma cells**  
K. Faber, A. Joshi, W. Rastedt, A. G. Schultz, F. Bulcke, R. Dringen, Germany

# Scientific Program

- 12:10 **New copper resistance determinants in *Acidithiobacillus ferrooxidans***  
C. Martínez-Bussenius, C. A. Navarro, C. A. Jerez, Chile
- 12:30 **Cytotoxicity of rare earth elements towards mammalian renal epithelial cells**  
A. Heller, J. Wober, Germany
- 12:50 **Spatiotemporal dynamics of autophagy and sphingolipid metabolism in life-death decisions of renal proximal tubule cells exposed to cadmium**  
F. Thévenod, W.-K. Lee, I. Diebels, M. P. Santoyo-Sanchez, S. Probst, K. Becker-Flegler, E. Gulbins, Germany
- 13:10 Lunch Break
- Session 13: Metal Transport II**  
*Chair: P. Wittung-Stafshede, H. J. Vogel*
- 14:10 **Copper and Zinc – Poisoning in Protozoan Grazing** (Invited)  
Chr. Rensing, Denmark
- 14:50 **Mechanisms of Resistance and Susceptibility of Bacteria to transition metals**  
O. Lewinson, D. Zhitnitsky, Israel
- 15:20 **The role of cation diffusion facilitators in zinc and manganese homeostasis in *Streptococcus pyogenes***  
A. G. McEwan, C. L. Ong, A. G. Turner, M. J. Walker, Australia
- 15:40 **Divalent metal transporter 1 (DMT1) contributes to mitochondrial metal ion import**  
M. D. Garrick, L. Zhao, L. M. Garrick, R. J. Kish, F. Thévenod, N. A. Wolff, A. J. Ghio, USA
- 16:00 **Siderophore- iron and ferrous iron transport by outer membrane proteins of *Francisella tularensis***  
G. Ramakrishnan, USA
- 16:20 **IBS General Meeting**
- 17:20 **End**
- 19:30 **Conference Dinner** (18:45 Meeting point in hotel lobby)

# Scientific Program

Friday, July 15<sup>th</sup>, 2016

## Session 14: Defense

*Chair: M. Lemos, S.Clemens*

- 08:30 **Apo-lactoferrin but not ferric-form induced stabilization of Nfr2 and hypoxia-inducible factors 1- and 2-alpha in rodents – insight into neuroprotective properties**  
*V. A. Kostevich, E. T. Zakharova, A. V. Chechushkov, E. B. Menshchikova, P. M. Kozhin, N. K. Zenkov, A. V. Sokolov, V. B. Vasilyev, Russia*
- 08:50 **Correlation between *Vitreoscilla* Hemoglobin Gene (*vgb*) and Cadmium Uptake In the Heterologous Host *Enterobacter aerogenes* In Response To Metabolic Inhibitors**  
*Kh. M. Khleifat, Muayad M. Abboud, Jordan*
- 09:10 **Deconstructing the desferrioxamine B biosynthetic sequence catalysed by DesD**  
*T. J. Telfer, M. P. Gotsbacher, C. Z. Soe, R. Codd, Australia*
- 09:30 **Towards antibiotics that harness the antibacterial properties of copper ions at the host-pathogen interface**  
*S. Shah, A. G. Dalecki, C. L. Crawford, J. Sun, S. H. Bossmann, O. Kutsch, F. Wolschendorf, USA*
- 09:50 **Uptake and Extrusion of Metals by Bacteria**  
*D. Zhitnitsky, O. Lewinson, Israel*
- 10:10 Break
- 10:30 **Awards**  
*Chair: P. Cornelis, G. Winkelmann*
- Announcements**
- Closing**
- 12:00 End

## **Influence of H<sub>2</sub>O<sub>2</sub> on two ferrous-iron uptake systems (FeoABC and EfeUOB) in *Escherichia coli***

S. R. Al-Aidy, C. Moon, S. C. Andrews, United Kingdom

## **Identification of genes potentially involved in Cd-dependent Zn-translocation to shoots in tobacco**

A. Barabas, M. Palusinska, D. M. Antosiewicz, Poland

## **Chemical speciation of An(III) and Ln(III) in human saliva**

A. Barkleit, C. Wilke, A. Heller, T. Stumpf, A. Ikeda-Ohno, Germany

## **New spectroscopic insights into the uranyl-acetate system by TRLFS and UV-vis**

H. Brinkmann, H. Moll, T. Arnold, T. Stumpf, Germany

## **Heme transport systems in the lactic acid bacterium *Lactobacillus sakei***

E. Verplaetse, P. Duhutrel, G. Coeuret, C. Nielsen-LeRoux, M.-C. Champomier-Vergès, France

## **Nontransferrin-bound iron as a marker for excessive iron in hemodialysis patients**

C. W. Chen, C. C. Lin, M. P. Chen, H. C. Mao, S. L. Hsiao, J. H. Jiang, Y. L. Huang, Taiwan

## **Zinc transporter 3 gene deletion alters adult hippocampal neurogenesis**

Bo Y. Choi, Mi Y. Moon, S. H. Lee, A Ra Kho, D. Ki Hong, S. H. Suh, M. Sohn, S. W. Suh, Korea

## **Redox toxicity and hemoglobin**

R. Bangle, C. J. P. Siburt, A. L. Crumbliss, USA

## **Iron metabolism in *Naegleria gruberi***

J. Břla, M. Glavanakovová, K. Ženíšková, R. Šuták, Czech Republic

## **Titanium Ion Release in Human Serum**

J. P. Curtin, T. F. Cheng, H. Z. Sun, L. J. Jin, China

## **Water mobility at the active site of an ion transporter**

K. Fahmy, E. Fischermeier, A. Sayed, P. Pospisil, M. Hof, Germany

## **First insights into the Eu(III) and U(VI) sorption behavior on diatom biosilica**

C. Fischer, M. Vogel, M. Bader, R. Steudtner, E. Brunner, Germany

## **Role of hexonate metabolism and iron in resistance to egg white in *Salmonella enterica* serotype Enteritidis**

A. M. Ghareeb, P. Sabrou, S. Jan, F. Baron, S. C. Andrews, United Kingdom

## **CusS a copper sensor in *Escherichia coli***

J. Rismondo, M.-S. Gerlach, C. Große, Germany

## **Determination of stability constants of selected U(VI) flavone complexes by absorption and emission spectroscopy**

A. Günther, G. Geipel, Germany

# Posters

## **Oxidative stress generated by nanomolar plutonium in *Solanumtuberosum* L. plants**

D. K. Gupta, L. Hamann, A. Hölzer, C. Walther, Germany

## **A role for copper in protozoan grazing - two billion years selecting for bacterial copper resistance**

X. Hao, F. Lüthje, R. Rønn, N. A. German, F. Huang, J. Kisaka, D. Huffman, H. A. Alwathnani, Y.-G. Zhu, Chr. Rensing, China

## **Specificity of siderophore uptake and signalling in *Pseudomonas aeruginosa***

A. Heywood, R. C. Draper, I. L. Lamont, New Zealand

## **Chromium(VI) removal by actively growing yeast cells**

S. E. Karatay, G. Dönmez, Turkey

## **Isolation experiments for Cu(II) tolerant yeast cells**

S. E. Karatay, G. Dönmez, Turkey

## **The usage of yeast cells for Nickel(II) bioremoval**

S. E. Karatay, G. Dönmez, Turkey

## **Search for genes controlling Zn acumulation pattern in tobacco leaves**

M. Kendziorek, A. Papierniak, K. Kozak, D. M. Antosiewicz, Poland

## **Chromium(VI) Bioremediation by Novel Thermophilic Microalgal Strains From Contaminated Wastewaters**

N. K. Kılıç, G. Dönmez, Turkey

## **Rapid Copper(II) Removal by Living Biomass of Microalgae Namely *Gonium* sp.**

N. K. Kılıç, G. Dönmez, Turkey

## **The usage of Microalgae Biomass in the Treatment of Nickel(II) Contaminated Wastewaters**

N. K. Kılıç, G. Dönmez, Turkey

## **Copper(II) Containing Dye Bioremoval By Newly Isolated Thermophilic Microalgae**

N. K. Kılıç, G. Dönmez, Turkey

## **Evidence of uranium uptake in *Acidovorax facilis* cells by TRLFS and EF-TEM/EELS**

E. Krawczyk-Bärsch, U. Gerber, R. Steudtner, Germany

## **Endocytosis-mediated siderophore uptake in marine diatoms**

J. Paz-Yepes, R. Sutak, S. Leon, J.-M. Camadro, C. Bowler, E. Lesuisse, France

## **Copper homeostasis in the foodborne pathogen *Salmonella* Typhimurium**

K. J. Muddiman, S. E. Rigby, A. W. Munro, J. S. Cavet, United Kingdom

## **Influence of uranium(VI) on the metabolism of plant cells**

S. Sachs, G. Geipel, K. Fahmy, M. Obeid, F. Bok, Germany

# Posters

## **Structural studies of rat ceruloplasmin reveal a new labile copper binding site**

V. R. Samygina, A. V. Sokolov, S. O. Kozlov, V. B. Vasilyev, Russia

## **Interaction of ceruloplasmin with complex of lactoferrin and oleic acid**

A. V. Sokolov, A. Yu. Vlasenko, V. A. Kostevich, E. T. Zakharova, V. B. Vasilyev, Russia

## **Multiple complexes of ceruloplasmin with inflammatory proteins**

A. V. Sokolov, V. A. Kostevich, E. T. Zakharova, V. B. Vasilyev, Russia

## **Expression study and functional characterization of *AhZIP6* in *Arabidopsis thaliana***

J. Spielmann, V. Deblander, M. Scheepers, P. Motte, M. Hanikenne, Belgium

## **Modulation of Zn and Cd biology in ectomycorrhizal symbiont *Hebeloma mesophaeum***

V. Benes, T. Leonhardt, P. Kotrba, Czech Republic

		Sunday, July 10 <sup>th</sup> , 2016	Monday, July 11 <sup>th</sup> , 2016	Tuesday, July 12 <sup>th</sup> , 2016	Wednesday, July 13 <sup>th</sup> , 2016	Thursday, July 14 <sup>th</sup> , 2016	Friday, July 15 <sup>th</sup> , 2016				
08:	30		Welcome								
	40										
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09:	00		Session 1: Coordination Chemistry and Environmental Issues					Session 5: Metal Transport I	Session 9: Sensors	Session 11: Plants and Eukaryotes	Session 14: Defense
	10										
	20										
10:	30		Break					Break	Break	Break	Break
	40										
	50										
11:	00		Session 2: Radionuclides					Session 6: Zinc and Fe	Session 10: Young Scientist Session	Session 12: Toxicity	Awards
	10										
	20										
12:	30		Lunch					Lunch	Lunch / Board of Directors	Lunch	Announcements
	40										
	50										
13:	00		Lunch					Lunch	Meeting point in the hotel lobby	Lunch	Closing Ceremony
	10										
	20										
14:	30		Session 3: Signaling, Diseases and Acquisition					Session 7: Metals and Regulation	Excursion	Session 13: Metal Transport II	Lunch
	40										
	50										
15:	00		Break					Break	Excursion	Session 13: Metal Transport II	Lunch
	10										
	20										
16:	30	Opening Registration Desk	Session 4: Signaling, Diseases and Acquisition (cont.)	Session 8: Redox of Metals (non Fe)	IBS General Meeting	Lunch					
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17:	00	Get together	Break	Break	IBS General Meeting	Lunch					
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	20										
18:	30	Evening Lecture <i>Alan Baker</i>	Break	Break	IBS General Meeting	Lunch					
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19:	00	Evening Lecture <i>Alan Baker</i>	Postersession	Postersession	Meeting point in the hotel lobby	Lunch					
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20:	30	Evening Lecture <i>Alan Baker</i>	Postersession	Postersession	Meeting point in the hotel lobby	Lunch					
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21:	00	Evening Lecture <i>Alan Baker</i>	Postersession	Postersession	Meeting point in the hotel lobby	Lunch					
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	30	Evening Lecture <i>Alan Baker</i>	Postersession	Postersession	Meeting point in the hotel lobby	Lunch					
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