

FESTEM / GMS Meeting 2019

Potsdam, Germany

Tuesday, April 2nd 2019

12:00 – 14:00 **WORKSHOP I**
The latest developments and application of Single Particle ICP-MS and Single Cell ICP-MS
Michael Petrich (PerkinElmer LAS GmbH, Germany)

12:00 – 13:45 **FESTEM BOARD MEETING AND ELECTIONS**

12:00 – 14:00 *Registration*

14:00 – 14:30 **OPENING CEREMONY**

14:30 – 15:45 **SESSION I: ANIMAL HEALTH AND DISEASE**

Chair: Daniel Brugger

14:30-15:00 Willi Windisch (Technical University Munich):

Responsibilities in Feeding Trace Minerals to Livestock: Impacts on Environment and Food Quality

15:00-15:15 Esther Humann-Ziehank (LABVETCON), A. Menzel, P. Roehrig, B. Schwert, M. Ganter, I. Hennig-Pauka:

Acute and subacute response of iron, zinc, copper and selenium in pigs experimentally infected with *Actinobacillus pleuropneumoniae*

15:15-15:30 Stéphane Durosoy (CEO Animine, Sillingy), D. Cardoso, A. Romeo, N. Meme, Y. Chevalier, A. Narcy:

Physicochemical properties of ZnO correlated to their bioavailability in broilers

15:30-15:45 Winfried Arnhold (H. Wilhelm Schaumann GmbH), M. Seifert, B. Ridout:

Titanium Status in Ruminants and Omnivores

15:45 – 16:15 *Coffee break*

16:15 – 18:15

SESSION II: ENVIRONMENT

Chair: Bernhard Michalke, Paola Borella

16:15-16:45 Pilar Bermejo-Barrera (University of Santiago de Compostela), M. V. Taboada-López, R. Domínguez-González, A. Moreda-Piñeiro:

Environmental impact of the metal-nanoparticles and their possible effects on health

16:45-17:00 Nadine Wiesmann (University Medical Center Mainz), C. Buhr, M. Viel, W. Tremel, J. Brieger:

Nanoparticulated metal oxide - harmful toxicants or promising innovative therapeutics?

17:00-17:30 Andrey R. Grabeklis (RUDN University Moscow):

Occupational exposure to metals: issues of choosing biomarkers

17:30-17:45 Paola Borella (University of Modena and Reggio Emilia), A. Bargellini, A. Ferrari, S. Paduano, G. Frezza, I. Marchesi:

Neurobehavioral effects of chronic low lead exposure in children: an updated review

17:45-18:00 Martin Herzberg (Martin-Luther-University Halle-Wittenberg), L. Bütof, V. Schulz, D. Dobritzsch:

A complex metal homeostasis forces a basic cellular metal composition through a predefined core metallome in proteobacteria like *Cupriavidus metallidurans*

18:00-18:15 Ulrike Seidel (University of Kiel), E. Baumhof, F. Hägele, A. Bosy-Westphal, M. Birringer, G. Rimbach:

Lithium in German mineral waters and its bioavailability in humans

18:15 – 19:15

WELCOME RECEPTION

19:15 – 20:15

GMS BOARD MEETING

Wednesday, April 3rd 2019

- 08:00 – 09:00 *Registration*
- 08:00 – 09:00 **WORKSHOP II**
Fundamentals of ICP-MS and ICP-MS/MS compared to other atomic spectroscopy techniques and why it is particularly well suited for speciation and other hyphenated application
Jörg Hansmann (Agilent, Germany)
- 09:00 – 10:30 **SESSION III: HOT TOPICS IN ANALYTICS AND BIOMARKERS Part I**
Chair: Dirk Schaumlöffel, Montserrat Gonzalez Estechea
- 9:00-9:30 Maria Montes-Bayón (University of Oviedo), M. Corte Rodríguez, R. Álvarez-Fernández García, J. Bettmer:
ICP-MS based tools to study the fate of nanostructured elemental species in cells
- 9:30-9:45 Bernhard Michalke (Helmholtz Zentrum München), D. Willkommen, V. Venkataramani:
Iron Redox Speciation Method Using Capillary Electrophoresis coupled to Inductively Coupled Plasma Mass Spectrometry (CE-ICP-MS)
- 9:45-10:00 Margarita G. Skalnaya (RUDN University Moscow), Yu. N. Lobanova:
Determinants of serum Mn levels: in search for potential biomarkers
- 10:00-10:30 Josiane Arnaud (University Hospital of Grenoble):
External Quality Assessment Schemes: Organizer and user point of view
- 10:30 – 11:00 *Coffee break*
- 11:00 – 12:45 **SESSION III: HOT TOPICS IN ANALYTICS AND BIOMARKERS Part II**
Chair: Marco Vinceti, Kostja Renko
- 11:00-11:30 Dirk Schaumlöffel (Université de Pau et des Pays de l'Adour/CNRS), M. Angels Subirana Manzanaras:
Trace element localization in cells and tissue
- 11:30-12:00 Hajo Haase (TU Berlin):
Measurement and physiological relevance of free zinc ions

- 12:00-12:15 Johannes F. Kopp (University of Potsdam), K. Lossow, J. Baudry, S. M. Müller, G. Pohl, M. Schulze, A. Kipp, T. Schwerdtle:
Trace element profiling in very small volumes of human serum for the application in large cohorts
- 12:15-12:30 Doris Kuehnelt (University of Graz), N. Kröpfl, I. Rohn, K. A. Francesconi, T. Schwerdtle:
Analysis of selenoneine and ergothioneine in biological samples – challenges and current applications
- 12:30-12:45 Lutz Schomburg (Charité University Medical School Berlin):
Selenoprotein P as biomarker for selenium status-associated health risks
- 12:45 – 13:15 **WORKSHOP III**
Introduction to Scholarly Publishing: Publication and Research Ethics
Silke Guddat (Elsevier JTEMB, Germany)
- 13:15 – 14:00 *Lunch break*
- 14:00 – 16:00 **SESSION IV: HEALTH BENEFITS AND RISKS**
Chair: Margarita G. Skalnaya, Lutz Schomburg
- 14:00-14:30 Wolfgang Maret (King's College London):
A new era of zinc biology
- 14:30-14:45 Maria Maares (TU Berlin), C. Keil, H. Haase:
Addressing molecular factors of intestinal zinc resorption using a Caco-2/HT-29-MTX barrier model
- 14:45-15:15 Marco Vinceti (University of Modena and Reggio Emilia):
Methodologies and uncertainties in risk assessment of trace elements: the selenium example
- 15:15-15:30 Isabelle Rohn (University of Potsdam), N. Kröpfl, J. Bornhorst, D. Kuehnelt, T. Schwerdtle:
Selenoneine, a novel selenium species: lessons learned from cells and worms
- 15:30-15:45 Tommaso Filippini (University of Modena and Reggio Emilia), C. Malagoli, M. Malavolti, M. Vinceti:
Dietary cadmium exposure and risk of melanoma: an Italian population-based case-control study

15:45-16:00 Nikolay Solovyev (Ghent University),
E. Drobyshev, L. Kybarskaya, S. Dagaev:
Intravenous beryllium toxicity – new lessons to take

16:00 – 17:45 **Poster Session I and Coffee break**

17:45 – 19:00 **GMS GENERAL ASSEMBLY AND ELECTIONS**

Thursday, April 4th 2019

08:45 – 10:45 **SESSION V: HUMAN HEALTH**

Chair: Anna Kipp, Muriel Bost

8:45-9:15 Elias S. J. Arnér (Karolinska Institutet):

The selenium dependent thioredoxin system as a target for drug therapy in cancer or oxidative stress

9:15-9:30 Laurent Chavatte (Centre International de Recherche en Infectiologie Lyon), C. Vindry, O. Guillin, P. Mangeot, T. Ohlmann:

Regulation of human selenoproteins: development of a new tool mimicking selenium deficiency based on CRISPR-CAS9 virus-like particles

9:30-10:00 Alexey A. Tinkov (RUDN University Moscow):

Toxic trace elements in obesity and metabolic syndrome

10:00-10:15 Sandra M. Müller (University of Potsdam), J. F. Kopp, G. Pohl, S. Hornemann, J. Spranger, A. F. H. Pfeiffer, K. Mai, T. Schwerdtle:

Biomonitoring in the NutriAct intervention study

10:15-10:30 Arturo Corbatón-Anchuelo (Hospital Clínico San Carlos Madrid), M. González-Estecha, N. Martell-Claros, M. Fuentes-Ferrer, M. T. Martínez-Larrad, M. Serrano-Ríos:

Is lead a remarkable component in resistant hypertension? Results from a study in patients of a Spanish hypertension unit

10:30-10:45 Anatoly V. Skalny (RUDN University Moscow):

'Macro effects' of 'micro elements': current trends in trace element status of russian population

10:45 – 11:15 *Coffee break*

11:15 – 12:45

SESSION VI: AGING

Chair: Maria T. Llorente Ballesteros, Anatoly V. Skalny

11:15-11:45 Vadim Gladyshev (Harvard Medical School):

Systems biology of selenium utilization

11:45-12:15 Susan Fairweather-Tait (University of East Anglia Norwich), A. Jennings, NU-AGE consortium:

Effects of consuming a Mediterranean-like dietary pattern on trace element intake, and iron and selenium status, in elderly men and women: results from the NU-AGE study

12:15-12:30 Julia Baudry (Deutsches Institut für Ernährungsforschung), J. F. Kopp, T. Schwerdtle, M. Schulze:

Change of trace element profiles during aging: preliminary results from the EPIC-Potsdam study

12:30-12:45 Jessica Baesler (University of Potsdam), J. F. Kopp, G. Pohl, M. Aschner, H. Haase, T. Schwerdtle, J. Bornhorst:

Zinc homeostasis in Parkinson's disease - investigations of labile and total zinc levels in aging *Caenorhabditis elegans*

12:45 – 13:45 *Lunch break*

13:45 – 15:30

SESSION VII: INTERACTIONS OF TRACE ELEMENTS

Chair: Esther Humann-Ziehank, Barbara Witt

13:45-14:15 Anna Kipp (Friedrich Schiller University Jena):

Interactions of selenium with other essential trace elements

14:15-14:30 Florin Muselin (BUASMV "King Michael I of Romania" from Timisoara), Z. Gârban, R. T. Christina, A. O. Doma, E. Dumitrescu, A. B. Vițălaru, I. Bănățean-Dunea:

Homeostatic changes of some trace elements in geriatric rats in condition of oxidative stress induced by aluminium and the benefic role of resveratrol

14:30-15:00 Julia Bornhorst (University of Potsdam), J. Baesler, M. Nicolai, V. Michaelis, J. F. Kopp, G. Pohl, M. Aschner, A. Bürkle, A. Mangerich, H. Haase, T. Schwerdtle:

Insights in trace element effects and interactions with focus on *C. elegans*

15:00-15:15 Olga P. Ajsuvakova (RUDN University Moscow),
D. Willkommen, A. A. Skalnaya, A. A. Tinkov, B. Michalke,
V. Danilov, A. V. Skalny:

Assessment of toxic and essential trace element levels in
patients with Parkinson's disease

15:15-15:30 Nicola Winkelbeiner (University of Potsdam), F. Ebert,
M. Martin, K. Lossow, A. Kipp, J. F. Kopp, A. Mangerich,
A. Bürkle, J. Bornhorst, T. Schwerdtle:

Trace element profiles and genomic stability in aging: DNA
repair and damage response

15:30 – 16:15

WORKSHOP IV

Career Development & Research Funding – Why and how to apply
Georg Munz (DFG, Germany)

16:15 – 17:45

Poster Session II and Coffee break

19:00 – 22:00

Dinner

Friday, April 5th 2019

08:45 – 11:00

SESSION VIII: PATHOPHYSIOLOGY AND TOXICOLOGY

Chair: Tanja Schwerdtle

8:45-9:15 Michael Aschner (Albert Einstein College of Medicine New
York):

Manganese-Induced Neurotoxicity: Lessons from Worms

9:15-9:30 Vivek Venkataramani (UMG Goettingen), T. R. Doepfner,
D. Willkommen, C. M. Cahill, Y. Xin, G. Ye, Y. Liu, A. Southon,
A. Aron, H. Y. Au-Yeung, X. Huang, D. K. Lahiri, F. Wang,
A. I. Bush, G. G. Wulf, P. Ströbel, B. Michalke, J. T. Rogers:

Manganese causes neurotoxic iron accumulation via
translational repression of Amyloid Precursor Protein (APP) and
H-Ferritin

9:30-10:00 Rosanna Squitti (Molecular Markers Laboratory Brescia):

Cognitive Dysfunction in neurodegenerative disorders: focus on
copper

10:00-10:15 Muriel Bost (Trace Element Analysis Laboratory Lyon),
G. Piguët-Lacroix, O. Guillaud, E. Broussolle, C. Laurencin,
L. F. Lion, A. Lachaux:

Diagnosis of hereditary copper disorders in childhood by Next-
Generation Sequencing

10:15-10:45 Anne-Laure Bulteau (IGFL Lyon), S. Mounicou, L. Chavatte,
J. Malherbe, P. le Costumer, E. Gontier, D. Schaumlöffel,
C. Nizard, E. Noblesse, S. Schnebert:

Impact of heavy metal accumulation on skin

10:45-11:00 Hannah Finke (University of Potsdam), V. Wandt, F. Ebert,
N. Guttenberger, M. Stiboller, G. Raber, K. A. Francesconi,
T. Schwerdtle:

Toxicological characterization of an arsenic-containing
phosphatidylcholine in human liver cells

11:00 – 11:30

Coffee break

11:30 – 12:30

GABRIEL BERTRAND PRIZE 2019

12:30 – 13:15

HEINZ-ZUMKLEY-PRIZE 2019

13:15 – 13:30

CLOSING REMARKS AND POSTER AWARDS