

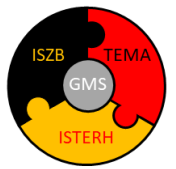


Aachen – Germany | Old imperial city in the heart of Europe

International Conference of Trace Elements and Minerals

Short Program – Session Overview

On-site Meeting of 36th GMS, 7th ISZB, TEMA17 and 14th ISTERH
June 5 – 10, 2022



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Platinum



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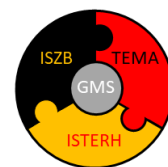


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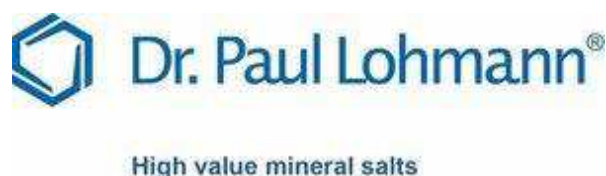




Silver



Bronze

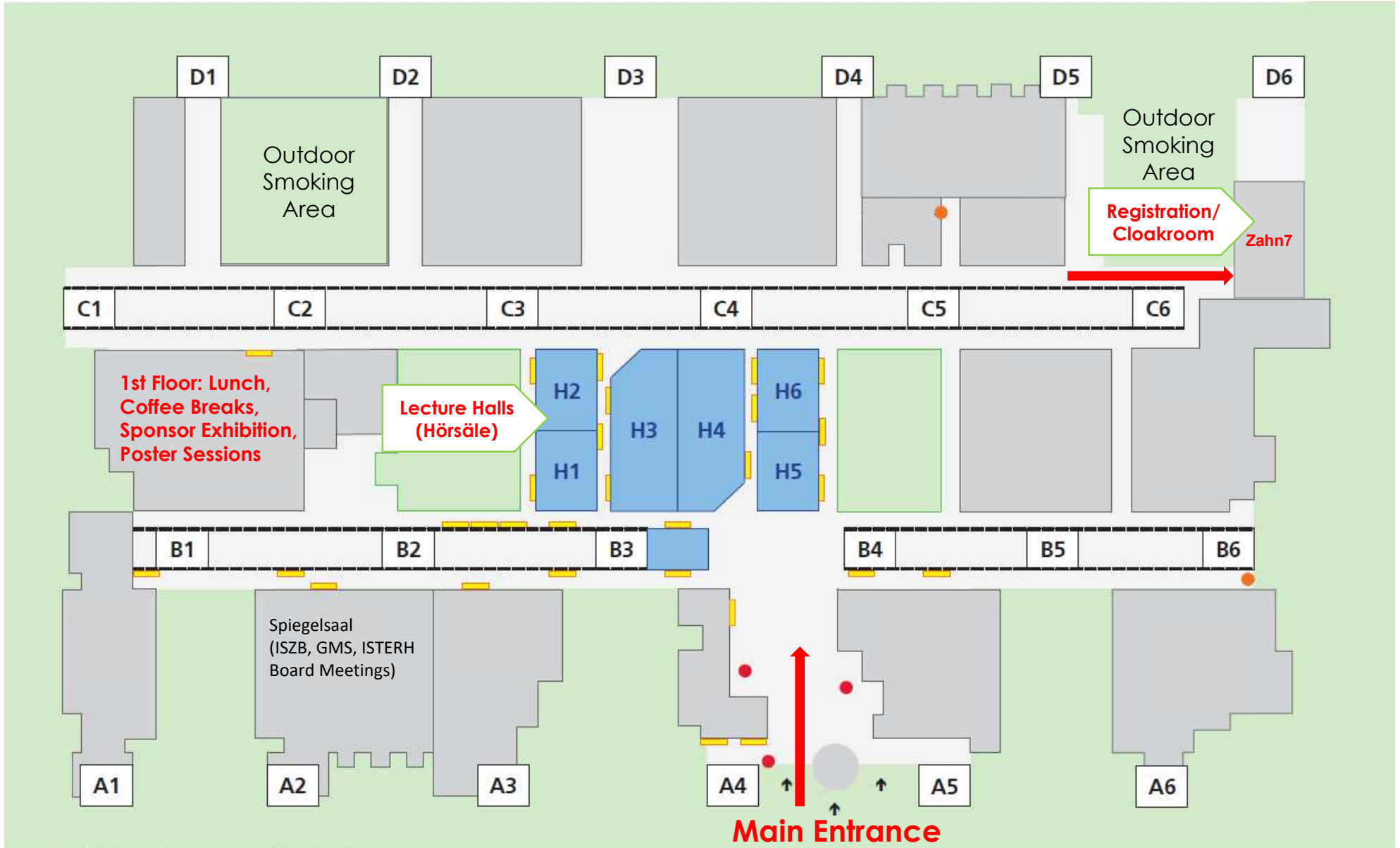


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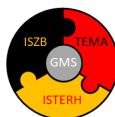
Poster Prize





Preliminary Program ICTEM 2022

	Sunday June 5	Monday June 6	Tuesday June 7	Wednesday June 8	Thursday June 9	Friday June 10
8:00-8:30		Poster mounting 1	Poster mounting 2			
8:30-9:00		Keynote Lecture (8:30-9:30) Karin Broberg	Keynote Lecture (8:30-9:30) Laura Silvestri	Keynote Lecture (8:30-9:30) Josef Köhrlé	Keynote Lecture (8:30-9:30) Kathryn Taylor	Keynote Lecture (8:30-9:30) Wei Zheng
9:00-9:30						
9:30-10:00		Coffee break (9:30 - 10:00)				Coffee break
10:00-10:30			Symposia 10 - 12 (9:45 - 11:15)	Symposia 19 - 21 (9:45 - 11:15)	Symposia 25 - 27 (9:45 - 11:15)	Selected Abstracts (10:00 - 12:00)
10:30-11:00		Symposia 1 - 3 (10:00 - 11:30)				
11:00-11:30			Coffee break (11:15 - 11:45)	Coffee break (11:15 - 11:45)	Coffee break (11:15 - 11:45)	
11:30-12:00		Lunch / ISZB Board (11:30 - 1:00)				Lunch
12:00-12:30			Symposia 13 - 15 (11:45 - 1:15)	Symposia 22 - 24 (11:45 - 1:15)	Symposia 28 - 30 (11:45 - 1:15)	Closing Remarks
12:30-13:00						
13:00-13:30						
13:30-14:00		Symposia 4 - 6 (1:00 - 2:30)	Lunch / GMS Board (1:15 - 2:45)	Lunch / TEMA Parent C. (1:15 - 2:30)	Lunch / ISTERH Board (1:15 - 2:30)	
14:00-14:30						
14:30-15:00					Symposia 31-32 (2:30 - 4:00)	Young Investigators
15:00-15:30		Symposia 6r - 9 (2:45 - 4:15)	Symposia 16 - 18 (2:45 - 4:15)	Social Afternoon (Start 15:30)	ISTERH Business Meeting (4:00 - 5:00)	
15:30-16:00						
16:00-16:30		Coffee break (4:15 - 4:45)	Coffee break (4:15 - 4:45)			
16:30-17:00		Sponsor Session (4:45 - 5:45)	Sponsor Session 2 (4:45 - 5:45)			
17:00-17:30	Welcome Address (5:00 - 6:30)	ISZB Business Meeting	GMS Business Meeting			
17:30-18:00		17:45 Group Photo	Zumkley Prize & Distinctions			
18:00-18:30						
18:30-19:00	Welcome Reception (finger food and drinks provided)	Poster Session 1 (6:15 - 8:00)	Poster Session 2 (6:15 - 8:00)		6:00 Cathedral Concert	
19:00-19:30		(snacks and drinks provided)	(snacks and drinks provided)			
19:30-20:00						
20:00-21:00					7:30 Conference Dinner & ISZB Award	



Monday, June 6 2022

Keynote Lecture (Lecture Hall 3)

8:30 – 9:30 **Karin Broberg**

Manganese – the role of genetics and epigenetics

1 Sexual Dimorphism in Metal-Associated Diseases

10:00 – 11:30 am, Lecture Hall 3

Chair: Jamie Young

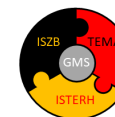
Jamie Young Louisville, USA	Whole-life, low-dose cadmium exposure exacerbates diet-induced non-alcoholic fatty liver disease in male, but not female mice
Aisha Dickerson Baltimore, USA	Potential Sex Differences Relative to Parental Metal Occupation Exposures and Risk of Autism Spectrum Disorder in Offspring
Koren Mann Montreal, Canada	Early-life Arsenic Exposures and Sex-specific differences in development of atherosclerosis in mice.
Jiancheng Xu Jilin, China	Sex differences in the correlation between serum trace elements and clinical biomedical indexes of type 1 diabetes (<i>remote</i>)

2 Physiology and pathophysiology of metal signaling

10:00 – 11:30 am, Lecture Hall 4

Chairs: Michal Hershinkel, Toshiyuki Fukada

Khanh Lee Chung-Li, Taiwan	Prediction of metal binding sites from protein sequence: an explainable machine learning model (<i>remote</i>)
Ashenafi H. Betrie Melbourne, Australia	A role for zinc in vascular physiology and pathophysiology



Milos Bogdanovic Be'er Sheva, Israel	ZIP3, distinctly expressed on mossy fibers, is responsible for CA3 neuronal degeneration following seizure
Moon-Suhn Ryu Seoul, South Korea	Zinc and Its Transporter ZIP10 in Erythroid Differentiation and Heme Metabolism (<i>remote</i>)

3 Zinc and Silver, Chemical, Toxicological and Environmental Aspects of a Novel Antagonism

10:00 – 11:30 am, Lecture Hall 1

Chairs: Wojciech Bal, Artur Krężel

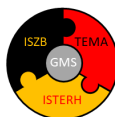
Harley Betts Paris, France	Investigating the chemistry of silver in biological systems (<i>remote</i>)
Hugh Harris Adelaide, Australia	
Aurelien Deniaud Grenoble, France	Nuclear translocation of silver ions upon silver nanoparticle exposure lead to nuclear receptor impairment
Artur Krężel Wroclaw, Poland	Zinc to silver swap in zinc finger domains disrupts their native structures and DNA recognition
Wojciech Bal Warsaw, Poland	Silver interference with essential metals in cirrhotic liver

4 Manganese-induced neurotoxicity: Genetic, Epidemiologic, and Environmental Perspectives

1:00 - 2:30 pm, Lecture Hall 1

Chairs: Karin Tuschl, Wei Zheng

Karin Tuschl London, UK	The role of manganese in brain physiology and disease
Somshuvra Mukhopadhyay Austin, USA	Regulation of Mn homeostasis and neurotoxicity by SLC30A10 (<i>remote</i>)
Tomas Guilarte Miami, USA	Slc39a14 Knockout Mice: A Genetic Model to Study Manganese-Induced Dystonia-Parkinsonism (<i>remote</i>)
Donald Smith Santa Cruz, USA	Understanding Manganese Developmental Toxicity and Efficacy of Therapeutic Intervention (<i>remote</i>)



5 Zinc, the Intestinal Mucosa and Inflammation

1:00 - 2:30 pm, Lecture Hall 4

Chairs: Christer Hogstrand, Shannon Kelleher

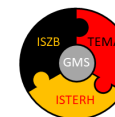
Christer Hogstrand London, UK	The aryl hydrocarbon receptor is a regulator of zinc uptake in the intestinal epithelium and cooperates with zinc to improve barrier function
Shannon L. Kelleher Hershey, USA	Zinc and mucosal inflammation: Novel roles for ZnT2
Steven J McElroy Iowa, USA	The importance of Zinc-rich Paneth cells in the pathophysiology of necrotizing enterocolitis
Emily Strachan London, UK	Sex, guts and tumours

6 ICTEM selection

1:00 - 2:30 pm, Lecture Hall 3

Chair: Dianne Ford

Dianne Ford, Newcastle upon Tyne, UK	The potential contribution of variability in zinc supply to ribosome heterogeneity and function
Andrea Hartwig Karlsruhe, Germany	Zinc signaling involved in PARP-1 activation and genomic stability
Richard Thompson Waltham, USA	Applications of Carbonic Anhydrase-Based Fluorescence Metal Ion Biosensors
Kira Slepchenko Ohio, USA	Heterogeneity of metalloproteome of single pancreatic beta-cells as detected by synchrotron X-ray fluorescence



6.1 From Rock to Food:

The Fate of Minerals in Functional Agriculture (remote)

2:45 – 4.15 pm, Lecture Hall 1

Chair: Xuebin Yin, Henrike Fischer

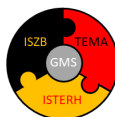
Yongguan Zhu Beijing/Xiamen, China	The spatial distribution of Se in the global rice (remote)
Xuebin Yin Suzhou/Hefei, China	Mineral footprints: From rock to foods
Zhangmin Wang Suzhou, China	A case study about selenium intake in Enshi, China
Rochana Tangkoonboribon Khlong Luang, Thailand	Research progress of selenium rich functional agricultural in Thailand
Jiaping Song China	A decrease of soil nematode abundances with increased soil Se levels in a pot experiment under selenite biofortification

7 Metal Exposures throughout the Life Course: Epidemiological, Toxicological, and Exposure Challenges

2:45 – 4.15 pm, Lecture Hall 3

Chairs: Aaron Specht, John Jr Wise

Aaron Specht West Lafayette, USA	2D Benchtop X-ray Fluorescence Approaches to Exposure Assessment
John Jr Wise Louisville, USA	Heavy Metals Induce Brain Aging: Investigating Hexavalent Chromium [Cr(VI)] as a Neurotoxicant and a Gerontogen
Christian Hoover Boston, USA	Firearms as a Primary Exposure Source of Lead in Children
Ana Pejovic-Milic Toronto, Canada	Feasibility of detecting bone tungsten using in vivo X-ray fluorescence
Erin Haynes Lexington, USA	Ambient Manganese Exposure and Pediatric Neurodevelopment (remote)



8 The identification and development of novel biomarkers of zinc physiological status, Part 1

2:45 – 4.15 pm, Lecture Hall 4

Chair: Elad Tako

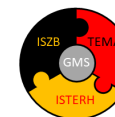
Elad Tako Ithaca, USA	The Linoleic Acid: Dihomo- γ -Linolenic Acid Ratio (LA:DGLA)-An Emerging Biomarker of Zn Status
Omry Koren Tel Aviv, Israel	Zinc deficiency and the intestinal microbiome
Tolunay Beker Aydemir New York, USA	Zinc metabolism in GI-related disorders: Implications for potential biomarkers
Alex Johnson Melbourne, Australia	Improving food security with zinc enriched cereal, assessment and implementaion
Emily Ho Corvallis, USA	Association between zinc absorption, physiological status and age (<i>remote</i>)

9 Trace Age

2:45 – 4:15 am, Lecture Hall 5

Chairs: Julia Bornhorst, Maria Schwarz

Julia Bornhorst Wuppertal, Germany	Interaction of zinc and manganese homeostasis in aging organisms
Wen-Hsing Cheng Mississippi State, USA	Selenium Regulation of Aging in Telomere Humanized Mice
Maria Schwarz Jena, Germany	Copper blocks hepatic Selenoprotein P release
Paul Copeland Piscataway, USA	The hepatotoxic drugs benzbromarone and sorafenib are potent inhibitors of selenoprotein synthesis that target the selenocysteine incorporation machinery (<i>remote</i>)



Sponsor Session 1

4:45 – 5:45 pm, Lecture Hall 3

Rahma Balegi, Animine	Animine Precision Minerals
Eric van Genderen, International Zinc Association	Zinc
Tba	Tba

ISZB Business Meeting

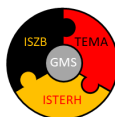
4:45 – 5:45 pm, Lecture Hall 4

Group Photo

5:45 pm, tba

Poster Session 1

6 pm – 8 pm, Poster Area



Tuesday, June 7 2022

Keynote Lecture (Lecture Hall 3)

8:30 – 9:30 **Laura Silvestri**

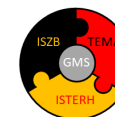
Managing the dual nature of iron to preserve health: from basic mechanisms to therapeutic approaches

10 When Physicists Meet Neuroscientists: All that Metals

9:45 – 11:15 am, Lecture Hall 3

Chairs: Xuemei Huang, Linda Nie

Linda Nie West Lafayette, USA	Distribution Pb and Se in Mouse Brain Following Subchronic Pb Exposure by Using Synchrotron X-ray Fluorescence
Susan Nielsen Phoenix, USA	Neurologic Health Effects of Chronic Environmental Mn Exposure in Adults
Xuemei Huang State College, USA	Understanding the effects of essential and non-essential metals on brain structure and function: effects of low level welding fume exposure in "asymptomatic" workers
Tim Salditt Göttingen, Germany	Multimodal and X-ray Imaging of Human Brain Tissue (<i>remote</i>)
Anumantha Kanthasamy Athens, USA	Exosomes as Mediators of Manganese-Induced Neuroinflammation and Neurotoxicity: Translational Implications for Biomarker Discovery in Parkinsonism (<i>remote</i>)



11 TEMA Domestic and Experimental Animal Session, Part 1

9:45 – 11:15 am, Lecture Hall 1

Chair: Xingen Lei

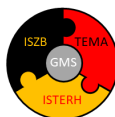
Karen Wedekind St. Charles, USA	Use of serum biomarkers to assess lameness and efficacy of chelated trace minerals (Zn/Cu/Mn) in reducing gait score in finisher pigs
Mélissa Duplessis Québec, Canada	The importance of a holistic approach to assess trace element feeding practices in dairy herds
Friedrich Schöne Jena, Germany	Modifying the trace element status of food by agricultural means – Chances and limitations
Mustafa Naziroğlu Isparta, Turkey	Selenium diminished chemotherapeutic agents-induced mitochondrial oxidative stress and neuropathic pain via the inhibition of TRPM2 (<i>remote</i>)
Peng Ji Davis, USA	Research on early-life iron imbalance in a piglet model (<i>remote</i>)

12 High-End Trace Element detection

9:45 – 11:15pm, Lecture Hall 4

Chairs: Esther Humann-Ziehank, Dirk Schaumlöffel

Tatjana Taubitz Belvaux, Luxembourg	Multimodal imaging of metallic nanoparticles for high resolution nanoanalytics in biological systems
Esther Humann-Ziehank Burgdorf, Germany	Pre-analytic errors during specimen collection – examples for effects on zinc concentrations
Bernhard Michalke München, Germany	Combination of elemental speciation techniques proof changes in metallome and metabolome in neurodegenerative condition
Dirk Schaumlöffel Pau, France	High-end imaging techniques for the analysis of trace element distribution in cells and tissues

**13 Biomarkers of Zinc Status**

11:45 am – 1:15 pm, Lecture Hall 3

Chair: David Fleming

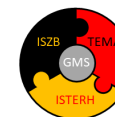
Louise Brough Auckland, New Zealand	Zinc intakes and status among breastfeeding women and their infants (<i>remote</i>)
David Fleming Sackville, Canada	Assessment of X-ray fluorescence capabilities for nail and hair through zinc measurement in reference materials
Nicola Lowe Preston, UK	The response of DNA fragmentation to moderate increases in zinc intake from biofortified wheat: a cluster randomized controlled trial
Christopher J Frederickson Galveston, USA	Zinc concentration in hair or nails can be a reliable indicator of past zinc nutrition, but many small procedural details are <i>critical (remote)</i>
Andrew Hall Davis, USA	Fatty acid metabolic response to changes in zinc intake: data from BIZIFED2 (<i>remote</i>)

14 Zinc in Cardiovascular Disease

11:45 am – 1:15 pm, Lecture Hall 4

Chairs: Belma Turan, Alan Stewart

Alan Stewart St. Andrews, UK	Fatty acids modulate zinc-dependent coagulation through albumin binding in type 2 diabetes
Amy Dorward St. Andrews, UK	Zinc is at the heart of sarcoplasmic reticulum calcium leak under physiological conditions
Richard D. Rainbow Liverpool, UK	The mystery of hyperglycaemia-induced cardiac pro-arrhythmicity: is zinc our mechanistic link?
Belma Turan Ankara, Turkey	New approaches to the roles of ZnT7 and ZnT8 in insulin resistant cardiomyocytes (<i>remote</i>)
Erkan Tuncay Ankara, Turkey	Overexpression of ZnT6 plays an important role in mitochondrial dysfunction in hyperglycemic cardiomyocytes (<i>remote</i>)

**15 Extracurricular activities of zinc transporters**

11:45 am – 1:15 pm, Lecture Hall 1

Chairs: Arie Moran, Taiho Kambe

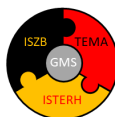
Raz Zarivach Be'er Sheva, Israel	Structural studies of eukaryotic and prokaryotic Cation Diffusion Facilitator shed light on their activation and regulation differences
Arie Moran Be'er Sheva, Israel	The secret flirt of ZnT-1 with the calcium channel β subunit
Taiho Kambe Kyoto, Japan	What happens if zinc supply to the early secretory pathway mediated by ZNT5-6 and ZNT7 is impaired? (<i>remote</i>)
Yukina Nishito Kyoto, Japan	Sophisticate responses of ZNT1 and MT to alteration of ZIP protein expression (<i>remote</i>)
Bing Zhou Beijing, China	A ZIP homologue functions in the iron homeostasis of <i>D. melanogaster (remote)</i>

16 Role of the natural brain metal-binder neuromelanin in aging and neurodegenerative diseases

2:45 – 4:15 pm, Lecture Hall 4

Chair: Tim Hofer

Tim Hofer Oslo, Norway	Xenobiotic-neuromelanin interactions and models to study toxicity
Luigi Zecca Rome, Italy	Neuromelanin-metal complexes in brain aging and Parkinson disease
Harald E. Möller Leipzig, Germany	Investigation of Contrast Mechanisms for Neuromelanin-Sensitive MRI
Antje Biesemeier Belvaux, Luxembourg	Analysis of neuromelanins and metals involved in neurodegeneration of Parkinson's disease using novel high resolution secondary ion mass spectrometry
Jake Brooks Warwick, UK	Label-free, in-situ characterization of neuromelanin and associated metal ions by synchrotron x-ray spectromicroscopy



17 The identification and development of novel biomarkers of zinc physiological status,

Part 2

2:45 – 4:15 pm, Lecture Hall 3

Chair: Elad Tako

Jacquelyn Cheng New York, USA	Development of the Zinc Status Index.
Diego Moretti Zurich, Switzerland	Assessing the efficacy of nutritional zinc interventions with serum zinc
Marija Knez Belgrad, Serbia	FADS1 and FADS2 as biomarkers of Zn status – a systematic review and meta-analysis is for the talk (<i>remote</i>)
Gretchen Mahler New York, USA	Modeling Zinc Transport with In Vitro and Animal Models of the Human Gut: The Role of Food Additive Exposure (<i>remote</i>)

18 Trace Elements and the CNS

2:45 – 4:15 pm, Lecture Hall 1

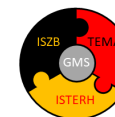
Chair: Imre Lengyel, Tolunay B. Aydemir

Jian-Hong Zhu Wenzhou, China	Novel functions of selenoproteins in Parkinson's disease (<i>remote</i>)
Imre Lengyel Belfast, UK	Multi omics and single cell sequencing approaches for deciphering zinc biology in the eye (<i>remote</i>)
Tolunay B. Aydemir New York, USA	Gut to brain: Role of SLC39A14/ZIP14-Mediated Manganese Transport
Jane M. Flinn Fairfax, USA	Excess zinc causes impairments in behavior and brain function in mice containing both amyloid and tau to model Alzheimer's disease (<i>remote</i>)

Sponsor Session 1

4:45 – 5:45 pm, Lecture Hall 3

Patrick Lindemann, Perkin Elmer	Career Opportunities for Young Scientists at Perkin Elmer
Tba	Tba

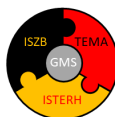


GMS Business Meeting

4:45 – 5:45 pm, Lecture Hall 4

Poster Session 2

6 pm – 8 pm, Poster Area



Wednesday June 8, 2022

Keynote Lecture (Lecture Hall 3)

8:30 – 9:30 **Joseph Köhrle**

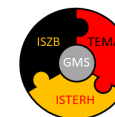
Selenium – an essential trace element for health acting via selenoproteins throughout human life.

Genetics, prevention, treatment

19 Trace Elements in Etiology of Alzheimer's and Parkinson's Diseases
9:45 – 11:15 am, Lecture Hall 1

Chair: Yansheng Du

Yansheng Du Indianapolis, USA	Lead exposure and the etiology of Alzheimer disease via cerebral amyloid angiopathy: Evidence from animal studies
Jennifer Freeman West Lafayette, USA	Embryonic lead exposure and sex-specific Alzheimer's disease associated alterations in the zebrafish adult brain
Paul Territo Indianapolis, USA	The etiology of chronic lead induced alterations in the blood brain barrier system via DCE-CT
Uzay Emir West Lafayette, USA	Developing a novel MRI technique to study brain myelination and demyelination in neurodegenerative diseases (<i>remote</i>)



20 Trace Elements in Metabolic Syndrome
9:45 – 11:15 am, Lecture Hall 3

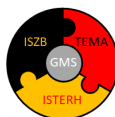
Chair: Xingen Lei

Yoshiro Saito Sendai, Japan	Selenoprotein P as a significant regulator of redox and energy metabolism: the involvement of selenium metabolism
Xingen Lei New York, USA	A new cascade of GPX1/REG2/CaV1.2 in the augmented insulin secretion induced by GPX1 overproduction
Lucia Seale Hawaii, USA	Effects of selenium supplementation in the selenocysteine lyase knockout mouse
Lucia Pedrosa Natal, Brazil	Dietary intake of iron, copper, and selenium are associated with HDL-c and blood glucose alterations in patients with metabolic syndrome.

21 Zinc Buffering Systems
9:45 – 11:15 am, Lecture Hall 4

Chair: Claudia Blindauer

Claudia Blindauer Warwick, UK	Free fatty acid-modulated plasma zinc speciation affects cellular zinc uptake
Hajo Haase Berlin, Germany	Implications of extracellular zinc buffering: how meaningful are in vitro studies
Christoph Fahrni Atlanta, USA	Tracing Biological Zinc with Fluorescent Probes: Challenges and Opportunities
Wolfgang Maret London, UK	Zinc buffering and muffling in human Zn ²⁺ secreting cells
Nigel Robinson Durham, UK	How cells help proteins to acquire, or avoid, zinc versus other metals: The free energies of metalation (<i>remote</i>)



22 Manganese Neurotoxicity: From Bone to Brain

11:45 am – 1:15 pm, Lecture Hall 1

Chairs: Wei Zheng

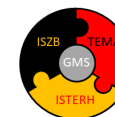
Ulrike Dydak West Lafayette, USA	Quantifying brain manganese levels by MRI: What is considered harmful?
Ellen Wells West Lafayette, USA	Bone manganese as a biomarker of manganese exposure: summary and future research needs
Jim Liu Albuquerque, USA	Selective Interaction of Arsenic with Zinc Finger Proteins: mechanism of metal toxicity
Arthi Kanthasamy Athens, USA	Exosomes as Mediators of Manganese-Induced Neuroinflammation and Neurotoxicity: Translational Implications for Biomarker Discovery in Parkinsonism (<i>remote</i>)

23 Zinc Ion Cybernetics: Integrating Cellular Zinc Homeostasis

11:45 am – 1:15 pm, Lecture Hall 3

Chairs: Wolfgang Maret, Irina Korichneva

Zui Pan Arlington, USA	Identification of an unrecognized novel role of SMI1 in zinc uptake
Vladimir Chubanov München, Germany	Regulatory mechanisms and pharmacological profiles of TRPM7
Nicholas Pugh Cambridge, UK	The role of zinc signals in platelet activation during thrombosis and haemostasis
Samantha Pitt St. Andrews, UK	Does Zn ²⁺ -mediated sarcoplasmic reticulum Ca ²⁺ leak drive cardiac dysfunction?

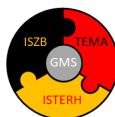


24 Metal Ions and Immunity, Part 1

11:45 am – 1:15 pm, Lecture Hall 4

Chairs: Inga Weßels, Daren Kneell

Håkan Eriksson Malmö, Sweden	Aluminium adjuvants in vaccines - a way to modulate the immune response
Girish Kirimanjeswara State College, USA	Contribution of Selenoproteins to B cell homeostasis
Jeanette Maier Italy	The role of magnesium in inflammation: preclinical and clinical evidence (<i>remote</i>)
Fudi Wang Hangzhou, China	The SLC39 and SLC30 Transporters: Zinc, Iron or Manganese? (<i>remote</i>)



Thursday June 9, 2022

Keynote Lecture (Lecture Hall 3)

8:30 – 9:30 **Kathryn M Taylor**

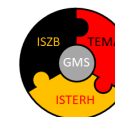
The LIV-1 family of zinc transporters: Navigating a long and winding road

25 Metals in Neurodegeneration

9:45 – 11:15 am, Lecture Hall 3

Chair: Per Roos

Per Roos Stockholm, Sweden	Geochemical exposure in neurodegenerative disease
Jyri Jarvet Stockholm, Sweden	The role of redox metals in protein aggregation in neurodegenerative disorders
Julia Smirnova Tallinn, Estonia	Metal distribution between protein peaks in ALS cerebrospinal fluid and blood plasma
Lassi Koski Stockholm, Sweden	Metal ratios in cerebrospinal fluid and blood plasma from amyotrophic lateral sclerosis patients
Aida Kamalian Stockholm, Sweden	Metal concentrations in cerebrospinal fluid, blood, serum, plasma, hair and nails in amyotrophic lateral sclerosis - a systematic review and metanalysis (<i>remote</i>)



26 Metal Ions and Immunity, Part 2

9:45 – 11:15 am, Lecture Hall 4

Chairs: Lothar Rink

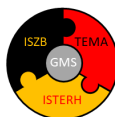
Inga Weßels Aachen, Germany	Zinc in Inflammatory Reactions
Markus Kleinewiefeld Hasselt, Belgium	The ionic microenvironment as a modulator of the immune cell balance and disease
Peter R. Hoffmann Honolulu, USA	Selenoproteins as regulators of T cell proliferation, differentiation, and metabolism (<i>remote</i>)
Daren L. Knoell Omaha, USA	The adverse impact of Cadmium on innate immune function (<i>remote</i>)
Günter Weiss Innsbruck, Austria	Iron at the interface of immunity and infection (<i>remote</i>)

27 TEMA Domestic and Experimental Animal Session, Part 2

9:45 – 11:15 am, Lecture Hall 1

Chair: Xingen Lei

Margaret P Rayman Guildford, UK	Nutritional inadequacy of dietary minerals from a diet with no animal foods
Juliana Ranches Oregon, USA	Trace mineral supplementation for beef calves prior to weaning
Xingen Lei Ithaca, USA	Comparative functional genomics of selenoproteins between rodents and food animals
Mohammed Amine Hachemi Lyon, France	Hydroxy-Selenomethionine induces the expression of selenoproteins, protects against oxidative stress and enhances the phagocytic capacity of macrophages stimulated with LPS.
Lvhui Sun Hubei, China	Detoxification effects of selenium against aflatoxin B1-induced toxicity in chickens (<i>remote</i>)



28 Cadmium and its effects on human health and disease: Preclinical and clinical insights

11:45 am – 1:15 pm, Lecture Hall 1

Chairs: Lu Cai, Young-Mi Go

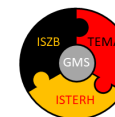
Lu Cai Louisville, USA	Maternal and early-life exposure to cadmium increase offspring susceptibility to diet-induced liver cancer
Young-Mi Go Atlanta, USA	Low dose cadmium-potentiated metabolic reprogramming in lung inflammation
Jin-Yong Lee Aichi, Japan	Molecular Mechanisms of cadmium-induced renal toxicity and its modifying factors
Jiapeng Huang Louisville, USA	Cadmium and Pulmonary Arterial Hypertension <i>(remote)</i>
Chendil Damodaran Tamu, USA	Cadmium induced Prostate Carcinogenesis <i>(remote)</i>

29 Metal Ions in Host Defense

11:45 am – 1:15 pm, Lecture Hall 3

Chair: Matthew J. Sweet

Toshiyuki Fukada Tokushima, Japan	A critical role of ZIP10 in lymphocytes and skin barrier functions <i>(remote)</i>
Ruben Vicente Garcia Barcelona, Spain	Zinc nutritional status and immune response upon SARS-CoV2 infection
Matthew J. Sweet Brisbane, Australia	Macrophage-mediated zinc toxicity as an antimicrobial weapon of the innate immune system
Ronan Kapetanovic Basel, Switzerland	A chink in the armor: Zinc poisoning and bacterial membrane targeting as a promising two-pronged antimicrobial strategy
Henrike J. Fischer Aachen, Germany	Fine tuning of T cell mediated immune responses by zinc



30 Trace Elements in Hematology and Cancer

11:45 am – 1:15 pm, Lecture Hall 4

Chairs: Irina Korichneva, Sandeep Prabhu

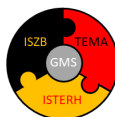
Leigh Ackland Melbourne, Australia	Zinc transporters and cancer <i>(remote)</i>
Sandeep Prabhu Pennsylvania, USA	Interrogation of the Role of Gpr44 in Acute Myeloid Leukemia
Irina Korichneva Amiens, France	Intramolecular interactions in the Trpm7 cationic channel determine zinc permeability and functional implications in invasive breast cancer
Elias Arner Stockholm, Sweden	Selenium dependent control of cell function through the thioredoxin system <i>(remote)</i>

31 Environmental Concerns of Trace Elements in Health and Diseases

2:30 – 4:00 pm, Lecture Hall 3

Chair: Denise Mafra, John Wise Sr.

John Wise Sr. Louisville, USA	The mechanisms of chromium carcinogenesis: A One Environmental Health perspective
Emma Martínez-López Murcia, Spain	Mercury in multiple brain regions of dolphin from Mediterranean Sea and its implications on neurochemical biomarkers
Denise Mafra Rio de Janeiro, Brazil	Could oral iron supplementation cause disturbances in the gut microbiota?
Xiaoqi Liu Lexington, USA	PLK1 in Cr(VI)- associated lung cancer progression
Meaza Indoia Louisville, USA	Prolonged Chromate Exposure Causes Inhibition of RAD51 Response and Increases Chromosome Instability in Human Bronchial Epithelial Cells

**32 TEMA's Highlights**

2:30 – 4:00 pm, Lecture Hall 1

Chair: Manju Reddy

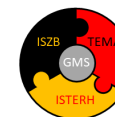
Fanis Missirlis Cinvestav, Mexico	Is kynurenine a hormone regulating systemic zinc homeostasis?
Patrizia Zavattari	Association of zinc deficiency and autoimmunity
Manju B. Reddy Ames, USA	Fortification and Supplementation Studies with <i>Aspergillus Oryzae</i> (Koji) Iron (<i>remote</i>)
Robert J. Cousins Gainesville, USA	Intestinal-specific Zip14 (Slc39a14) ablation dysregulates tight junction protein expression and inflammatory genes (<i>remote</i>)

33 ISZB Young Investigator Symposium

2:30 – 4:00 pm, Lecture Hall 4

Chairs: Anna Kocyla, Daniel Brugger

Wakana Ohashi Tokyo, Japan	The intrinsic roles of zinc homeostasis in intestinal development and functions (<i>remote</i>)
Michael Stiboller Potsdam, Germany	Analytical aspects for the analysis of arsenolipids in seafood
Solveigh Koeberle Jena, Germany	Selenium in NRF2 dependent redox signaling
Iurii Orlov Amiens, France	Copper transport analysis by intracellular imaging and its functional role in human primary smooth muscle cells
Daniel Brugger Zurich, Switzerland	Experimental modeling of subclinical zinc deficiency in animals
Anna Kocyla Wroclaw, Poland	What drives the zinc-dependent assembly of CD4/CD8 coreceptor and Lck tyrosine kinase (<i>remote</i>)

**ISTERH Business Meeting**

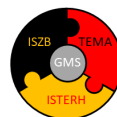
4:00 – 4:45 pm, Lecture Hall 4

Cathedral Concert

6 pm, Aachen Cathedral

Conference Dinner and ISZB/Frederickson-Prize: Awardee Dr. Kathryn M Taylor

7:30 pm, Erholungs-Gesellschaft Aachen 1837. Reihstraße 13, 52062 Aachen



Friday, June 10: Oral Sessions

Keynote Lecture (Lecture Hall 3)

8:30 – 9:30 **Wei Zheng**

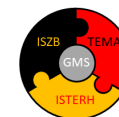
Imbalanced Copper Homeostasis in Brain Disorders:
Olfactory Dysfunction and Age-dependent Clearance
Disorder at the Blood-Brain Interfaces

34 Selected Abstracts 1: Copper + other trace elements

10:00 am – 12:00 pm, Lecture Hall 5

Chair: Hajo Haase

Ross Gregory Wenzel St. Leonards, Australia	Laboratory investigation of Cobalt Regulation in Racing Horses
Max Tuchtenhagen Nuthetal, Germany	A novel approach for the determination of Exchangeable Copper in serum using protein precipitation
Andrea Raab Ghent, Belgium	Isotope signature of iron, copper and zinc in mouse models (L66 and 5XFAD) and their controls used for dementia research
Tom Heinze Nuthetal, Germany	Serum trace element profiles – an association to dementia onset?
Sharleen Friese Nuthetal, Germany	Genomic integrity in murine organs in young mice with suboptimal trace element supply
Maria Maeres Berlin, Germany	Molecular characterization of trace element uptake in the gastrointestinal tract
Denny Pellowski Nuthetal, Germany	Monitoring serum iodine and thyroid hormones in a long-term dietary intervention of a healthy middle-aged German population
Jiatong Chai Changchun, China	Establishment of reference intervals for serum trace element in elderly population aged ≥ 60 (<i>remote</i>)
Dimitri Budinger London, UK	An iPSC-derived midbrain dopaminergic modelling platform reveals a key role for manganese homeostasis in cell survival and mitochondrial function (<i>remote</i>)



35 Selected Abstracts 2: Iron + other trace elements

10:00 am – 12:00 pm, Lecture Hall 1

Chair: Henrike Fischer

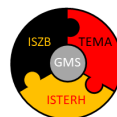
Jian Zhou Hunan, China	Modeling iron utilization in placenta with trophoblast organoids derived from pregnant sow
Linda H. Nie West Lafayette	Distribution of Lead, Selenium, and Other Metals in TgSWDI Transgenic Mice after Sub-chronic Lead Exposure
Vivien Michaelis Wuppertal, Germany	Placental transport interactions of manganese and iron across an in vitro model of human villous trophoblasts
Roberto R. Ferreira Rio de Janeiro, Brazil	Effects of Selenium treatment on cardiac function in Chagas heart disease: results from the STCC randomized trial and lessons from the benchwork to clinical application
Shuan Liu Hunan, China	Iron is essential for Goblet Cell Replenishment and Anti-salmonella Infection in mice, not Microbially Dependent (<i>remote</i>)
Liu Guo Hunan, China	Maternal Iron Supplementation during Pregnancy on Reproductive Performance and Placental Function in Animals (<i>remote</i>)
Yulong Yin Hunan, China	Iron nutrition in suckling pigs (<i>15 min presentation, remote</i>)

36 Selected Abstracts 3: Zinc

10:00 am – 12:00 pm, Lecture Hall 3

Chair: Lothar Rink

Josep Galceran Lleida, Spain	Assessing free Zn concentrations in solutions of biological interest with an electroanalytical technique
Tomer Eli Ben Yosef Seer-Shava, Israel	Mammalian ZnT-1 C-terminal domain structure and zinc binding
Gavin Boerboom Wageningen, The Netherlands	Effect of Dietary L-glutamic acid N,N-diacetic acid on zinc status parameters in subclinically deficient weaned pigs
Moran Melamed Beer-Shava, Israel	ZnR/GPR39 modulates saliva composition via regulation of Na ⁺ /K ⁺ ATPase activity
Anil Khushalrao Shendge Beer-Shava, Israel	Role of Zn ²⁺ sensing receptor, Zn/GPR39 in hepatic function



Xiuchuan (Lukas) Hu London, UK	The Aryl Hydrocarbon Receptor controls the intestinal epithelial zinc homeostasis
Samuel Jones Cardiff, UK	Zinc transporter ZIP6 preferentially prevents the proliferation of triple-negative and tamoxifen resistant breast cancers
Ahmed Alzahrani Cardiff, UK	Use of ZIP transporter chimeras to discover their functional mechanisms in cells
Jordan S. Marsh St. Andrews, UK	Role of plasma fatty acid and zinc dynamics in platelet functioning. Implications for pathological clotting (remote)

37 Selected Abstracts 4: Zinc + other trace elements

10:00 am – 12:00 pm, Lecture Hall 4

Chair: Inga Weßels

Onyinyechi Bede-Ojimadu Newi, Nigeria	Exposure to cadmium and the risk of prostate cancer among Nigerian men: effect modification by zinc
Thomas Gate Norwich, UK	Subcellular Zinc homeostasis and plant hormone regulation
Jeanette M. Miller Nashville, USA	A Bacterial Lytic Transglycosylase Responds to Zinc dysregulation
Unathi Tshoni Pretoria, South Africa	Concentrations of P and other toxic metals from petrol attendants in Pretoria, 15 years after the ban of leaded fuel
Nishat Zakaria London, UK	Zinc in metallomics and lipidomics of skin biology and pathology
Nadine Wiesmann Mainz, Germany	Zinc oxide nanoparticles exhibit for the promotion of the tissue integration of biomaterials
Malek El Muayed Chicago, USA	Urinary Metal Profiles and Glycemic Outcomes from the International Multiethnic Hyperglycemia and Adverse Pregnancy Outcome Follow Up Study (HAPO-FUS)
Lingyu Zhang China	Comparison of the effects of inorganic or amino acid-chelated zinc on mouse myoblast growth in vitro and growth performance and carcass traits in growing-finishing pigs (remote)