

International Society for the ISZB meeting, in collaboration with Zinc-Net (COST Action TD1304)

June 18-22, 2017

UCLan Campus, Pyla, Cyprus

Draft Programme



Day 1 – Sunday June 18th

12:00-18:00 REGISTRATION	10:00 – 12:00 Zinc- Net Final Management Committee meeting (MC members and substitutes only)
	14:00-16:00 Zinc Net Celebration Symposium (ALL welcome) Chairs: Nicola Lowe and Lothar Rink Keynote: Mukhtiar Zaman “The health and social impact of zinc deficiency in Pakistan” Short presentations on the highlights from the COST Action Zinc-Net activities: Maarten Merkx: Highlights in Chemical Biology Elena Planells: Highlights in Biomarker discovery Arie Moran: Highlights in Clinical coordination
18:00	Opening ceremony
18:30 – 19:30	Keynote lecture (1) Glen K. Andrews “Founders of our Field”
19:30-21:30	Welcome reception with buffet supper

Day 2- Monday June 19th

9:00-10:00	Keynote Lecture (2) Hidenori Ichijo "The roles and molecular mechanisms of SOD1-mediated stress responses in zinc-deficiency and ALS"	
10:00-10:30	Coffee Break	
10:30-12:00	<p>Symposium 1 Zinc and Infectious Diseases <i>Chair: Matt Sweet/Mark Walker</i> Duncan Wilson : Counteracting nutritional immunity: adaptation of fungal pathogens to zinc restriction' Jennifer Cavet: Battling against nutritional immunity: Zinc homeostasis in Listeria Matt Sweet: Utilization of zinc by innate immune cells for antimicrobial responses against Gram-negative bacteria Mark Walker: The role of zinc in group A streptococcal pathogenesis</p>	<p>Symposium 2 Physiological functions of zinc <i>Chair: Leigh Ackland and Shannon Kelleher</i> Shannon Kelleher: Got milk? ZnT2 and secretory function in the mammary gland Fanis Missirilis: How zinc storage works in a whole animal: what do we know? Mark Myers: ZIP7, zinc flux and insulin signaling Irina Koritchneva: Zn permeability through TRPM7 and regulation by growth factor in cancer cells</p>
12:00-13:30	Lunch	
13:30-15:30	<p>Symposium 3 Zinc transporters and signaling in physiology and diseases; New Winds from East and West <i>Chair: Toshiyuki Fukada & Taiho Kambe</i> Toshiyuki Fukada: Requirement Of Zinc Transporter SLC39A7/ZIP7 For Skin Dermal Development To Fine-Tune Endoplasmic Reticulum Function Wakana Ohashi: Role of zinc transporter SLC39A7/ZIP7 in intestinal homeostatic self-renewal Laxmi Sunuwar: ZnR/GPR39 reduces intestinal fluid secretion Ayako Fukunaka : Zinc transporter ZIP13 controls beige adipocyte biogenesis and energy expenditure Carlos Tejeda-Guzmán: Zinc Granules in the Malpighian Tubules of Drosophila</p>	<p>Symposium 4 New Zinc Discoveries from Cell Fate to New Technologies <i>Chair: Kathryn Taylor and Dianne Ford</i> Dianne Ford: Perturbations in zinc-regulated transcription in senescent cells Kathryn Taylor: Targeting zinc transporters to stop cell division Jian Hu: Structural insights into function of the extracellular domain of ZIP4 Tine Thingholm: Quantitative phosphoproteomics: investigating the role of zinc in cell signaling Ruth Valentine: Analysing early life zinc nutrition using the deciduous tooth</p>
15:30-16:00	Coffee Break	
16:00-18:00	<p>Symposium 5 Molecular Zinc Signaling in Health and Disease <i>Chair : Elias Aizenman</i> Samantha Pitt: Dysregulated zinc may lead to 'leaky' calcium channels in heart failure Christer Hogstrand: Dietary environmental contaminants cause disruption of zinc and calcium homeostasis in the brain Paul Rosenberg: Activation of a zinc-potassium channel pathway following optic nerve injury promotes neuronal death and blocks regeneration Bing Zhou: Zinc absorption and excretion in the model organism fruit fly Elias Aizenman: A novel neuroprotective strategy targeting a zinc/calcium cell death-enabling signaling pathway</p>	<p>Symposium 6 Zinc-Net Symposium : Zinc Proteins: Folding, Structure and Function <i>Chair: Cláudio M. Gomes & Claudia Blindauer</i> Cláudio M. Gomes: Zinc as a modulator of protein folding and supramolecular assembly Robert E. Dempksi: Structure and Function of Zinc transporters Yifat Miller: How zinc ions affect the molecular mechanisms of self-assembly of amyloid Stewart N Loh: Zinc as a modulator of folding and misfolding of p53 Ashley Ian Bush: Zinc and amyloid beta aggregation Claudia A. Blindauer: Metal-specific folding and folding-mediated discrimination in metallothioneins</p>

Day 3- Tuesday June 20th

9:00-10:00	Key note lecture (3) Stephen Lippard "Zinc Probes"	
10:00-10:30	Coffee break	
10:30-12:30	<p>Symposium 7 Zinc-Net Symposium : Zinc and immunity Chair: Lothar Rink</p> <p>Paola Bonaventura: Changes in Zinc metabolism induced by chronic inflammation Lothar Rink: Zinc and T cell functions Inga Wessels: The role of zinc in inflammatory diseases Hajo Haase: Total and free serum zinc levels during sepsis Daren L. Knoll: Cadmium-induced attenuation of macrophage immune function in smoking-induced lung disease Robert E. Black: Zinc deficiency and risk of infectious diseases in children</p>	<p>Symposium 8 Free Zinc? What is the nature of cellular exchangeable zinc and why should we care Chair: Wojciech Bal</p> <p>Wolfgang Maret: How do human cells sense imbalances of free zinc pools? Artur Krezel: How proteins match Zn(II) affinity with their function? Relations between thermodynamics and free zinc status Jacob M. Goldberg: Strategies for controlling the activity of small-molecule zinc sensors Wojciech Bal: Small molecule zinc complexes: an alternative to free zinc concept Wojciech Goch: Numerical simulations of the zinc –mediated inhibition of extrasynaptic NMDA receptors in 3D morphological reconstruction of neuropil.</p>
12:30-14:00	Lunch	
14:00 – 15:30	<p>Symposium 9 Zinc-Net Symposium: The impact of short-term research exchange missions on advancing the field of zinc in biology. Chair: Nicola Lowe & Philipp Gerber</p> <p>Vojtech Adam and Jorge Molina López: Zinc and metallothionein – Bioelectrochemical Sensing of Pathological and Pathophysiological States Antje Biesemeier and Francesco Piacenza: Measuring Zinc in Nano-vesicles by Analytical Electron Microscopy Imre Lengyel and Judit Olah: Expression of the brain specific TPPP/p25 protein in retinal neurons is stimulated by oral zinc supplementation Andreas Grabrucker and Joana S. Cristóvão: Investigation of the role of the zinc-binding pro-inflammatory S100B protein in Alzheimer's disease related neuronal protein aggregation</p>	<p>Symposium 10 Symposium proposal: Role of zinc transporters in mammals: from physiology to pathophysiology Chair: Belma Turan & Yehuda Assaraf</p> <p>Taiho Kambe: How are zinc-requiring ectoenzymes activated by zinc transporters in the secretory pathway. Tewfik Soulimane: Investigation the structure and function of zinc transporters lacking the cytoplasmic domain. Belma Turan and Erkan Tuncay: Characterization of localization and function of zinc transporter ZIP7 in the heart. Yehuda Assaraf: A Novel Loss of Function Mutation in the ZnT2 Gene Results in Impaired Splicing and Transient Neonatal Zinc Deficiency</p>
15:30-16:00	Coffee break	
Depart 16:00 Return by 22:00	Leave for Cultural Excursion (to be confirmed but may be a museum with time to explore a local town and have dinner)	

Day 4- Wednesday June 21st

9:00-10:00	Key Note lecture (4) Ismail Cakmak "Agronomic biofortification of food crops with zinc, iodine and selenium"	
10:00-10:30	Coffee break	
10:30-12:30	<p>Symposium 11 Zinc-based therapeutics – Translating zinc biology Chair: Paul Adlard and Scott Ayton</p> <p>Paul Adlard: Zn chaperones in health and disease Scott Ayton: Zn in Huntington's disease Stewart Loh: Zn ionophores and cancer Ashenafi Betri: Zn in the cardiovascular system David Whitfield: Zinc and synapses in dementia Andreas Grabrucker: Zinc deficiency in autism spectrum disorders Jorge Busciglio: Disruption of Zn neuromodulation by Aβ oligomers</p>	<p>Symposium 12 The role of zinc in metabolic disease Chair: Janet C King</p> <p>Liping Huang: Zinc transporters and their influence on carbohydrate and lipid metabolism. Janet C King: Small Changes in Dietary Zinc Modulate Lipid Metabolism and Biomarkers of Metabolic Health. John Beattie: Zinc, inflammation, and atherosclerosis CD Tran. CSIRO: Zinc, intestinal permeability, and risk of metabolic disease</p>
12:30-14:00	Lunch	
14:00-16:00	<p>Symposium 13 Selected early career researchers present. (10+5 min)</p> <p>Lucy Bütof: Zinc trafficking in <i>Cupriavidus metallidurans</i> Parsons Douglas: Structural and functional features of the C-terminal cytoplasmic domain of ZnT8 Pauline Chabosseau: CRISPR/Cas9-mediated engineering of insulin-secreting cells with Type 2 Diabetes risk variants of SLC30A8/ZnT8 Maayan Mero: The ZnR/GPR39 Enhances Breast Cancer Cell Growth Olivia Rivera: ZnT2 regulates lysosomal acidification and biogenesis during mammary gland involution Natalia Colomar: Store operated calcium entry blockade by zinc affects lymphocyte survival Maria Chiara Mastropasqua: Zinc homeostasis: a promising target for novel anti-Pseudomonas therapies in Cystic Fibrosis Sumati Rajagopalan: Imaging of zinc flux in natural killer cells at activating and inhibitory synapses</p>	
16:00-16:30	Coffee break	
16:30-18:00	<p>Symposium 14 HOT Topics in Zinc Biology Chair: Michal Hershfinkel and In-Sook Kwun</p> <p>Fabrice Chimienti: Zinc signals and imaging: application to stem cell-induced beta cells and dedifferentiation of mature beta cells. John Weiss: Zinc signals in acute hippocampal ischemia and differential vulnerabilities of CA3 vs CA1 pyramidal neurons Noam Levaot: Zinc regulates bone growth Larry Benowitz: Synaptic zinc dyshomeostasis suppresses cell survival and axon regeneration in the primary visual pathway</p>	<p>Symposium 15 HOT topics in Zinc Biology Chair: Wolfgang Maret</p> <p>Maarten Merckx: Protein Engineering of Luminescent Zinc Sensors Christoph Fahrni: Illuminating the Redistribution Dynamics of Zinc During Cell Proliferation and Embryonic Development Eric O. Long: Zinc-induced polymerization of killer-cell Ig-like receptor promotes its inhibitory function at cytotoxic immunological synapses Kirill I Kiselyov: Lysosomal zinc sink</p>
18:00-19:30	Poster discussion session 2 (with wine/beer)	

Day 5-Thursday June 22nd

9:00-10:30	<p>Symposium 16 Not just zinc; the moonlighting jobs of zinc transporters <i>Chair: Christer Hogstrand</i></p> <p>Peter Thomas: The androgen receptor role of Zip9 Gerold Schmitt-Ulms: The ZIP/prion protein relationship Michael Aschner: SLC30A10 is a cell surface-localized manganese efflux transporter Arie Moran: Two in one: ZnT-1 regulates Zn efflux and Calcium influx</p>	<p>Symposium 17 New insight into neurozinc signaling from Korea and Japan <i>Chair: Atsushi Takeda</i></p> <p>Youichirou Higashi: Brain zinc modulates microglial activation phenotype Haruna Tamano: LTP and memory are lost by extracellular Zn²⁺ influx: its relationship to aging Sang Won Suh: Zinc transporter 3 gene deletion alters hippocampal neurogenesis in mice Atsushi Takeda: Extracellular Zn²⁺ plays a key role for β-amyloid-induced cognitive decline</p>
10:30-11:00	Coffee break	
11:00-12:30		<p>Symposium 19 Zinc-Net Symposium: Staple crops biofortification with zinc <i>Chair: Fernando Lidon and Nicola Lowe</i></p> <p>Benvindo Maçãs : Bread wheat biofortification – genetic breeding approach. Fernando Lidon: Triticum aestivum biofortification with zinc - implications at a nutritional level.</p>
12:30-14:00	Lunch	
14:00-15:30	ISZB Business meeting	
19:00-Midnight	Gala Dinner at the Fort in Larnaca/ Prize giving /Fredrickson Prize, meeting close	



Poster session 1 (Mon. June 19, 18:00-19:30) :

1	Bogadanovich	Functional Role of ZIP1 and ZIP3 in the hippocampus
3	Craven	Excess zinc impairs activities of daily living, spatial memory, and hyperphosphorylated tau species in mice with human tau
5	JJ Hwang and Park	The role of zinc-dependent delayed calcium influx via TRPC5 channels in oxidative neuronal death and its prevention by novel TRPC antagonists
9	Laustsen	Metallothionein expression in the aging human brain
7	Mlyniec	GPR39 zinc receptor - on the trail of a new antidepressant and neuroprotective agent?
6	Qian	Zinc and pyridoxine exposure prevents thiol oxidation-dependent disruptions of microtubules and tau in rat primary cortical neurons
2	Slepchenko	Crosstalk between intracellular zinc rises and reactive oxygen species accumulation in hypoxia
4	Suh and Choi	Vesicular zinc depletion by acamprosate reduces traumatic brain injury-induced hippocampal neuron death
8	Tsubota	Identification of a zinc transporter as a mediator of SOD1 conformational change under zinc deficiency
10	Yoon	Potential role of zinc dyshomeostasis in matrix metalloproteinase-2, 9 activation and photoreceptor cell death in experimental retinal detachment
12	Bilde	Maternal smoking reduces metallothionein expression in first trimester placenta and fetal liver
13	Chu, Foster	Interrelationships of cellular zinc transporters and metallothioneins in type 2 diabetes mellitus (T2DM)
14	Chu, Varma	Long-term effects of exercise on zinc homeostasis – a systematic review
16	Karyotis	Deficiency of zinc and other micronutrients in soils cultivated with durum wheat (<i>Triticum durum</i>) in Greece
11	Karyotis and Kubiliene	Distribution and Uptake of Zinc in Winter Wheat under Contrasting Climatic Conditions
15	Kljusurić and Rimac Brincic	Daily zinc consumption in a vegetarian diet with emphasis on the impact of phytic acid
16	Knoell	An Emerging Role For Zip8 In Cadmium-Induced Lung Disease
17	Kwun	Zinc Regulation in Vascular and Atherosclerotic Calcification
19	Maares	Zinc-buffering by intestinal glycoproteins - in vitro-studies to investigate the role of mucins in zinc-resorption
20	Richardson	A Novel Method for Studying Zinc Deficiency in vitro and its Application
21	Degirmenci	Increased cytosolic free Zn ²⁺ alters action potential parameters via activation of KATP-channels in rat ventricular cardiomyocytes
22	Maier	The role of zinc and reactive oxygen species in insulin signalling
23	Mero	The ZnR/GPR39 Enhances Breast Cancer Cell Growth
24	Ogle	Targeting SLC39A transporters to prevent cell division
25	Rivera	ZnT2 regulates lysosomal acidification and biogenesis during mammary gland involution
26	Robertson	Zinc uncovers a role for Mitsugumin 23 in cardiac sarcoplasmic reticulum calcium leak

Poster session 2 (Wed. June 21, 18:00-19:30) :

27	Artake	Intracellular release of zinc regulates IL-4 induced arginase-1 expression in mouse microglia
28	Colomar	Store operated calcium entry blockade by zinc affects lymphocyte survival
29	Gammoh	Influence of Zinc on Antigen Processing and Presentation via MHC class II Molecules
30	Herzberg	Zinc uptake and storage, an interplay of the ZIP Transporter ZupT and the Zinc Repository in the bacterium <i>Cupriavidus metallidurans</i>
31	Kjellerup	Zinc homeostasis in <i>Candida albicans</i>
33	Kloubert	Increased <i>CREMα</i> transcription factor expression during zinc deficiency leads to decreased IL-2-production
34	Mastropasqu	Zinc homeostasis: a promising target for novel anti- <i>Pseudomonas</i> therapies in Cystic Fibrosi
35	Maywald	Zinc supplementation induces antigen-specific regulatory T cells by upregulation of Foxp3 and KLF-10, and downregulation of IRF-1 expression
36	Rajagopalan	Imaging of zinc flux in natural killer cells at activating and inhibitory synapses
37	Kocyła	Determination of the factors that drive high stability and heteroselectivity of CD4- Zn ²⁺ -Lck zinc clasp domain
38	Lidon	Bread wheat biofortification with zinc: a case study under controlled-environment conditions and field tria
39	Padjasek	<i>S. cerevisiae</i> Rad50 dimer assembly shifts upon dinuclear Zn ²⁺ -cluster formation
40	Stewart	Synchrotron sourced spectroscopies for subcellular bio-imaging of Zn in fish intestinal epithelia
41	Bitirim	Role of Sarcolemma localized Zn ²⁺ -transporters ZIP8 and ZIP14 in hyperglycemia-associated cardiac dysfunction
42	Butof	Zinc trafficking in <i>Cupriavidus metallidurans</i>
43	Chabosseau	CRISPR/Cas9-mediated engineering of insulin-secreting cells with Type 2 Diabetes risk variants of SLC30A8/ZnT8
44	Durak	Expression Levels of Zinc Transporters in Mammalian Failing Heart
45	Golan	Identification of Genetic Diseases Using Breast milk Cell Analysis: The Case of Transient Neonatal Zinc Deficiency (TNZD)
46	Parsons	Structural and functional features of the C-terminal cytoplasmic domain of ZnT8
47	Tuncay	Characterization of localization and function of Zn ²⁺ -transporter ZIP7 in mammalian heart
48	Ziliotto	Understanding How Targeting Zinc Signalling Prevents Cell Division In Cancer