

THE 8TH ISZB MEETING

ISZB-2024

SCIENTIFIC PROGRAM

Sunday, December 1st

16:00		<i>Registration</i>
18:00		Official Opening <i>Chair Fanis Missirlis, Centro de Investigación y de Estudios Avanzados del IPN - MX</i>
18:10		Welcome address from Local Organizing Committee <i>Elias Aizenman, University of Pittsburgh School of Medicine - US</i>
18:20		Welcome address from Local Authority Declaration of Commencement of the 8th ISZB Meeting
18:30		<i>Cinvestav's Secretary of Planning Martha Espinosa-Cantellano, Centro de Investigación y de Estudios Avanzados del IPN - MX</i>
18:45	O-01	Speciation of metal trace elements in living systems: a synchrotron-based approach <i>Christophe Den Auwer, Université Côte d'Azur - FR</i>
19:05	O-02	Conservation of regulatory zinc fluctuations in control of ovarian biology <i>Teresa Woodruff, Michigan State University - US</i>
19:25	O-03	Special delivery! Zn chaperones conserved across the tree of life <i>Crysten Blaby-Haas, Lawrence Berkeley National Laboratory - US</i>
19:45	O-04	A Zinc Sensing Receptor Fortifies Epithelial Barriers <i>Michal Hershinkel, Ben-Gurion University of the Negev - IL</i>
20:05	O-05	Zinc transporters and human evolution <i>Rubén Vicente, Pompeu Fabra University - ES</i>
20:30		<i>Reception</i>

Monday, December 2nd

07:30		<i>Registration</i>
08:30		<i>Setup posters</i>
08:45		SESSION: Cell Biology <i>Chair Teresita Padilla-Benavides, Wesleyan University - US</i>
08:50	O-06	Illuminating the cell biology of zinc <i>Amy Palmer, University of Colorado Boulder - US</i>
09:10	O-07	Exploring a role for ZIP6 and ZIP10 in the dissemination of breast cancer cells <i>Georgia Farr, Cardiff University - UK</i>
09:30	O-08	Identifying the role of sodium-myo-inositol transporter 1 in zinc accumulation <i>Sangyong Choi, University of Connecticut - US</i>
09:50	O-09	ALS-linked mutations in zinc metalloproteinase Oma1 impair its activity and impinge on mitochondrial fidelity <i>Oleh Khalimonchuk, University of Nebraska - US</i>
10:10	O-10	ZIP7 controls zinc concentration and redox state in the ER <i>Yuta Amagai, Kyushu University - JP</i>
10:30		<i>Coffee break</i>

11:00		SESSION: Cancer Chair <i>Kathryn Taylor, Cardiff University - UK</i>
11:05	O-11	Exploring the potential of ZIP transporter targeting agents as novel breast cancer therapeutics <i>Samuel Jones, Cardiff University - UK</i>
11:25	O-12	Single nucleotide polymorphisms and Zn transport by ZIP11 shape functional phenotypes of HeLa cells <i>Montserrat Olea-Flores, University of Massachusetts - US</i>
11:45	O-13	Exploring ZIP7 Phosphorylation and Its Role in Zinc-Mediated Activation of Oncogenic Signaling Pathways <i>Ahmed Alzahrani, Umm Al-Qura University - SA</i>
12:05	O-14	Zinc in glioma of long-term surviving patients - a pilot study <i>Emil Rudolf, Hradec Králové Charles University - CZ</i>
12:25		Conference Photo
12:45		Lunch (also: ISZB Board Meeting)
14:15		SESSION: Biochemistry Chair <i>Wolfgang Maret, King's College London - UK</i>
14:20	O-15	Clustering of Zn/S-species in Ectopic Biominerals at the Biological Interfaces in the Temporomandibular Joint and the Kidney <i>Sunita Ho, University of California San Francisco - US</i>
14:40	O-16	Zinc Fingers and Reactivity: No Longer Innocent Bystanders <i>Sarah Michel, University of Maryland - US</i>
15:00	O-17	Endogenous Zinc Protoporphyrin Formation Critically Contributes to Hemorrhagic Stroke-induced Brain Damage <i>Ke Jian "Jim" Liu, Stony Brook University - US</i>
15:20	O-18	CryoEM structures of zinc uptake transporters <i>Qun Liu, Brookhaven National Laboratory - US</i>
15:40	O-19	Structural basis of zinc-dependent protein quality control at the ER-Golgi interface <i>Kenji Inaba, Kyushu University - JP</i>
16:00		Coffee break
16:30		SESSION: Imaging Chair <i>Richard Dyck, University of Calgary - CA</i>
16:35	O-20	Beyond Zinc Chelation: Decoding the role of copper in TPEN-induced biological effects <i>Christoph Fahrni, Georgia Institute of Technology - US</i>
16:55	O-21	Zinc in neuronal synapses - quantitative aspects using high resolution imaging <i>Sivakumar Sambandan, Max Planck Institute for Multidisciplinary Sciences - D</i>
17:15	O-22	A novel FRET-based assay employed to examine the impact of serum albumin and fatty acids on insulin decomplexation <i>Alan Stewart, University of St Andrews - UK</i>
17:35	O-23	Zinc Imaging and Targeting of Pancreatic Islet Beta Cells <i>Wen-hong Li, University of Texas - US</i>
17:55	O-24	Next-Generation Genetically Encoded Fluorescent Indicators for Synaptic Zinc <i>Huiwang Ai, University of Virginia - US</i>
18:15		Poster Session
20:30		Past ISZB Presidents' Musings Chair <i>Samantha Pitt, ISZB president, University of St Andrews - UK</i> Founding ISZB President 2007-2011 <i>Glen Andrews, Professor Emeritus, The University of Kansas - US</i> ISZB President 2013-2015 <i>Wolfgang Maret, Kings College London - UK</i> ISZB President 2017-2019 <i>Kathryn Taylor, University of Cardiff - UK</i>

Tuesday, December 3rd

08:25 **SESSION: Transporters**

Chair *Toshiyuki Fukada, Tokushima Bunri University - JP*

08:30 O-25 **Transport mechanism and substrate specificity of ZIP metal transporters**

Jian Hu, Michigan State University - US

08:50 O-26 **The importance of zinc in protein N-glycosylation**

Taiho Kambe, Kyoto University - JP

09:10 O-27 **Physiological roles of ZIP13 in muscle and fat: Analysis of newly generated Zip13-genetically modified mice**

Ayako Fukunaka, Gunma University - JP

09:30 O-28 **Zn²⁺ transport through ZIP7 is required for T cell function**

Stefan Feske, New York University - US

10:00 *Coffee break*

10:30 **SESSION: Neuroscience**

Chair *Elias Aizenman, University of Pittsburgh School of Medicine - US*

10:35 O-29 **Mitochondrial Zn²⁺ uptake and ischemic neural injury**

John Weiss, University of California Irvine - US

10:55 O-30 **Probing the roles of zinc in axonal transport and tau displacement**

Yan Qin, University of Denver - US

11:15 O-31 **Of Zinc and NMDA Receptors**

Gabriela Popescu, University at Buffalo - US

11:35 O-32 **Zincergic neurons as mediators of cerebral cortical plasticity**

Richard Dyck, University of Calgary - CA

11:55 O-33 **Cortical Zinc Plasticity Contributes to the Recovery of Perceptual Hearing Thresholds after Noise Trauma**

Manoj Kumar, University of Pittsburgh - US

12:15 *Coffee break*

12:30 *ISZB Members Meeting*

13:30 *Lunch*

14:45 **SESSION: Epithelial Barriers and Beyond**

Chair *Michal Hershinkel, Ben-Gurion University of the Negev - IL*

14:50 O-34 **Dietary AHR agonists and zinc are conjoined regulators of intestinal epithelium permeability, and control proliferation and differentiation of intestinal stem cells**

Christer Hogstrand, King's College London - UK

15:10 O-35 **Zinc deficiency adversely impacts mucus barrier formation in the intestinal tract and lung**

Maria Maares, Technische Universität Berlin - DE

15:30 O-36 **Harnessing macrophage-mediated antibacterial zinc toxicity in host-directed therapies**

Matthew Sweet, University of Queensland - AU

15:50 O-37 **Consequences of small molecule chelators mediated changes in blood plasma zinc speciation**

Sirilata Polepalli, University of Warwick - UK

16:10 O-38 **The divergent roles of GPR39 in cardiovascular and metabolic tissues**

Jiemei Wang, Wayne State University - US

16:30 *Coffee break*

16:55 **SESSION: Nutrition**

Chair *Eduardo Brambila, Benemérita Universidad Autónoma de Puebla - MX*

17:00 O-39 **The Effects of Increased Non-Intestinal Zinc Losses on Dietary Zinc Requirements for Older Adults and Individuals at Risk for Noncommunicable Diseases**

Andrew Hall, University of California Davis - US

17:20 O-40 **The continuing search for a biomarker indicating zinc nutritional status**

Chris Frederickson, University of Houston - US

17:40	O-41	The role of zinc in white matter injury and brain development: from cells to humans <i>Christopher Elitt, Boston Childrens Hospital - US</i>
18:00	O-42	Regulation of Zinc Homeostasis in Rice <i>Luqing Zheng, Nanjing Agricultural University - CN</i>
18:30		Young Investigator Questions (science or career) <i>Chairs Violeta Aburto-Luna, Benemérita Universidad Autónoma de Puebla – MX</i> <i>Linda Le, University of Calgary - CA</i>
20:00		<i>Evening free</i>

Wednesday, December 4th

07:30		Chichén Itzá excursion
18:00		<i>Evening free</i>

Thursday, December 5th

08:45		SESSION: Physiology <i>Chair Marcia Hiriart, Universidad Nacional Autónoma de México - MX</i>
08:50	O-43	Examination of tooth mineral patterns as a record of in utero and childhood exposure <i>Dianne Ford, Northumbria University - UK</i>
09:10	O-44	The story of Ziegler-Huang Syndrome (ZHS), a newly discovered bone marrow failure syndrome 8 (BMFS8) in humans <i>Liping Huang, USDA/ARS/Western Human Nutrition Research Center - US</i>
09:30	O-45	Prophylactic administration of zinc and therapeutic administration of selenium at optimal doses in adult rats prevents long-term cognitive and behavioral sequels following a transient ischemic attack <i>Bertha Alicia León Chávez, Benemérita Universidad Autónoma de Puebla - MX</i>
09:50	O-46	Zinc modulation of MG23 leads to altered cellular calcium responses in cardiac tissue <i>Samantha Pitt, University of St Andrews - UK</i>
10:10	O-47	Seminal zinc regulates mammalian sperm <i>Anne Carlson, University of Pittsburgh - US</i>
10:30		<i>Coffee break</i>
11:00		SESSION: Immunology <i>Chair Lothar Rink, RWTH Aachen University - DE</i>
11:05	O-48	Free Zinc: keeping an eye on the bioavailable species <i>Hajo Haase, Technical University Berlin - DE</i>
11:25	O-49	Zinc signal synergize with calcium signals in T cell activation <i>Lothar Rink, RWTH Aachen University - DE</i>
11:45	O-50	ZIP8 Impacts the Gut-Lung Axis and is Required for Macrophage-Mediated Phagolysosomal Removal of Bacteria in the Lung <i>Daren Knoell, University of Nebraska - US</i>
12:05	O-51	Exploring the utility of zinc-ionophores for the treatment of <i>Acinetobacter baumannii</i> lung infection <i>David De Oliveira, University of Queensland - AU</i>
12:25	O-52	Variants in the zinc transporter TMEM163 cause a hypomyelinating leukodystrophy <i>Guillermo Rodriguez Bey, University of Pittsburgh - US</i>
13:00		<i>Lunch</i>

14:15		SESSION: Model Organisms <i>Chair Johana Vásquez-Procopio, Instituto Tecnológico del Valle de Oaxaca - MX</i>
14:20	O-53	Discovery of a mitochondrial zinc-specific importer in yeast <i>Ofir Klein, Weizmann Institute of Science, Israel</i>
14:40	O-54	Lysosome remodeling during zinc storage and release in <i>C. elegans</i> <i>Kerry Kornfeld, Washington University in St. Louis - US</i>
15:00	O-55	Comparative functional analyses of ZIPs/ZNTs in the fruit fly and mice <i>Bing Zhou, Shenzhen University of Advanced Technology - CN</i>
15:20	O-56	Evolutionary Conservation of Zinc-Mediated Nutritional Immunity Across Vertebrates and Insects in Host-Pathogen Interactions <i>Andrea Battistoni, Tor Vergata University of Rome - IT</i>
15:40	O-57	Quantitative Inorganic Phenotypes of Sperm and Roles of Zinc in Male Reproductive Health <i>Thomas O'Halloran, Michigan State University - US</i>
16:00		<i>Coffee break</i>
16:30		SESSION: Bioinorganic Chemistry <i>Chair Liliana Quintanar, Cinvestav - MX</i>
16:35	O-58	Protein quality control in the bacterial periplasm triggered by zinc starvation <i>Alejandro Vila, Instituto de Biología Molecular y Celular de Rosario - AR</i>
16:55	O-59	Understanding the Zn²⁺-dependent formation and stability of CD4/CD8α-Lck complexes crucial in T-cell activation <i>Anna Kocyla, University of Wrocław - PL</i>
17:15	O-60	Spectroscopic investigations of a bacterial redox sensing Zn protein implicated in biofilm formation <i>Kelly Chacón, Reed College - US</i>
17:35	O-61	Cargo selectivity, metal promiscuity, and translocation mechanism in transmembrane primary-active Zn(II) P-type ATPase pumps <i>Gabriele Meloni, University of Texas at Dallas - US</i>
17:55	O-62	Exploring the link between zinc storage and tryptophan metabolism using ¹⁹F NMR and bioinspired proteoliposomes <i>Alessandra Barbanente, Università degli studi di Bari Aldo Moro - IT</i>
18:15		<i>Poster Session</i>
19:45		<i>GALA dinner (please be on time)</i>

Friday, December 6th

08:30		Free morning <i>Suggestion: Beach excursion</i>
16:00		SESSION: Young Investigators <i>Chairs Violeta Aburto-Luna, Benemérita Universidad Autónoma de Puebla - MX Linda Le, University of Calgary - CA</i>
16:05	O-63	The vertebrate zinc metallochaperone ZNG1 is a critical contributor to host metal homeostasis and infection by <i>Staphylococcus aureus</i> <i>Kyle Enriquez, Vanderbilt University - US</i>
16:25	O-64	Two types of zinc storage granules are differentially distributed along the Malpighian tubules of <i>Drosophila melanogaster</i> <i>Carlos Tejeda Guzmán, Cinvestav - MX</i>
16:45	O-65	Prenatal zinc deficiency combined with postnatal high-fat consumption alters glucose metabolism in <i>Drosophila melanogaster</i> <i>Murtala Bello Abubakar, Sultan Qaboos University - OM</i>
17:05	O-66	Zinc cycle in the Dorsal Cochlear Nucleus <i>Stefania Nordio, Ben-Gurion University of the Negev - IL</i>
17:25	O-67	Zinc chelation prevents ADAM17-mediated cleavage of CSF-1R and improves cortical tissue recovery after mechanical injury <i>Diego Rolando Hernández Espinosa, University of Pittsburgh - US</i>

17:45	O-68	Metallomics ECR award: Zn-dependent transcriptional regulation in bacteria: Role of structure and internal dynamics in the evolution of Zn specific responses <i>Daiana Capdevila, Fundación Instituto Leloir, AR</i>
18:05		<i>Coffee break</i>
18:35		Closing talks <i>Chair Samantha Pitt, ISZB president, University of St Andrews - UK</i>
18:40		Prelude to Chris Frederickson Award <i>Chris Frederickson, University of Houston - US</i>
18:50		Presentation of Chris Frederickson Awardee <i>Samantha Pitt, ISZB president, University of St Andrews - UK</i>
19:00	O-69	Chris Frederickson Prize Talk 2024 award winner: <i>Prof. Elias Aizenman, University of Pittsburgh School of Medicine - US</i>
20:05	O-70	Closing remarks: learning from the past, bridging to the future <i>Toshiyuki Fukada, Tokushima Bunri University - JP</i>
20:30		Closing Ceremony <i>Chair Fanis Missirlis, Centro de Investigación y de Estudios Avanzados del IPN - MX</i>

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Esteban Gutiérrez García, *Universitat Pompeu Fabra, Laboratory of Molecular Physiology, C. del Dr. Aiguader, 88, Barcelona, España*
- P-02 Possible role of the 24p3 receptor in distal tubular nephrotoxicity induced by cadmium-metallothionein exposure**
Ana Karen Pantaleón Gómez, *Centro de Investigación y de Estudios Avanzados del IPN, Av Instituto Politécnico Nacional 2508, San Pedro Zacatenco*
- P-03 Methods for Imaging Zinc(II) Ions at Synaptic NMDA Receptors**
Jacob Goldberg, *Colgate University, Hamilton, New York USA*
- P-04 ZnR/GPR39 Protects Against Fibrosis and Liver Injury**
Subhajit Sarkar, *Ben Gurion University of The Negev, Beer Sheva*
- P-05 Taurine enhances zinc preconditioning-induced prevention of nitrosative stress, metabolic alterations, and motor deficits in neonatal rats following intrauterine ischemia**
Alejandro González Vázquez, *Benemérita Universidad Autónoma de Puebla, 13 sur 2702, Col. Volcanes, Puebla, 72410 Puebla, México*
- P-06 Multiple acute stressors differentially affect ZnT3 knockout mice**
Linda Le (1), Lauren Rusk (1), Heather Dirschl (1), Richard Dyck (1)
(1) *University of Calgary, 2500 University Dr NW, Calgary, AB, Canada*
- P-07 Prophylactic chronic administration of tolerable doses of zinc increases neuroinflammation in a hypoxia-ischemia model**
Viridiana Vargas-Castro, *Benemérita Universidad Autónoma de Puebla, Av. San Claudio s/n, 72570, Puebla, Pue. México*
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Víctor Manuel Blanco Álvarez, *Facultad de Enfermería BUAP, 25 poniente1304, Col. Los Volcanes, 72410, Puebla, Pue. Mx*
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- P-11 Computational characterization of the presence of zinc ions in the structure of metallothionein and possible implications in its interaction with cytoplasmic proteins**
Francisco Trujillo González, *Lab de Biofísica Computacional de Macromoléculas, BUAP, FCQ10, Facultad de Ciencias Químicas, CU, 72592, Puebla*
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Satoshi Takenaka, *The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo*
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Alma Isabel Santos Díaz, *Department of Physiology, CINVESTAV, Av IPN 2508, 07360 Mexico City, Mexico*
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Manuel Osorio, *Facultad de Odontología, Universidad Andrés Bello, Echaurren 227, Santiago, Chile*

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Johana Vasquez-Procopio, *TecNM/Instituto Tecnológico del Valle de Oaxaca, Ex Hacienda de Nazareno, Santa Cruz Xoxocotlán, Oaxaca*
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Artur Krężel, *Department of Chemical Biology, Faculty of Biotechnology, University of Wroclaw, Wroclaw, Poland*
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Kuanyu Li, *Medical School, Nanjing University, 22 Hankou Road, Nanjing, China*