



TEMA18-2024, india



**TEMA18 – 18th International Conference on Trace Elements in Man and Animals
M. S. Ramaiah Group of Institutions, Bengaluru, India (8-12 Nov 2024)**

Scientific Program

Friday, November 08, 2024	
1:00 PM to 4:00 PM	Registration, RIT Lobby (Transport from Hotels start at 2 pm)
4:00 PM to 5:00 PM	Inaugural Ceremony, Main Auditorium
5:00 PM to 5:30 PM	Coffee/ Tea Break (High Tea)
5:30 PM to 6:30 PM	Underwood Prize Lecture <i>Selenium and Selenoproteins in Health and Disease</i> Vadim Gladyshev Harvard Medical School, Boston, USA Main Auditorium <i>Chair: C. Channa Reddy (Alt: K. Sandeep Prabhu)</i>
6:30 PM to 7:00 PM	Break (Transport back to the hotels)
7:00 PM to 9:00 PM	Reception at Gokulam Grand Hotel and Spa (Lawn area)

Saturday, November 09, 2024			
8:30 AM to 9:15 AM	Plenary Lecture 1 <i>Impact of climate change on trace mineral requirements in the 1000 days</i> Nancy Krebs University of Colorado School of Medicine, USA <i>Chair: Shalini Nooyi</i>		
Poster set up in the lobby			
9:15 AM to 10:45 AM	Scientific Session 1 “Cancer I” Hall 2 <i>Chair: Christopher Williams</i> <i>Co-Chair: B. Avinash</i>	Scientific Session 2 “Structure and Activity of Selenium and Selenoproteins” Hall 3 <i>Chair: Paul Copeland</i> <i>Co-Chair: Tanisha Rathore</i>	Scientific Session 3 “Anemia and iron transport” Hall 4 <i>Chair: Iqbal Hamza</i> <i>Co-Chair: Santhosh Kumar Devadas</i>
	Invited Speaker 1 <i>SELENOP: A dual-role protein in inflammatory bowel disease and colorectal cancer</i> Christopher Williams Vanderbilt University School of Medicine, USA	Invited Speaker 4 <i>Novel developments in the selenoprotein biosynthesis pathway: Genes, biochemistry, and human disease</i> Ulrich Schweizer University of Bonn, Germany	Invited Speaker 7 <i>Functional adaptation of mammalian HRG1/SCL48A1 as an intestinal heme transporter</i> Iqbal Hamza University of Maryland School of Medicine, USA
	Invited Speaker 2 <i>Chemotherapeutic effects of organodiselenides (R-Se-Se-R) in lung cancer cells: Evidence of redox modulation towards reductive stress</i> Amit Kunwar	Invited Speaker 5 <i>Regulatory frameworks for selenoprotein expression</i> Paul Copeland Rutgers University, USA	Invited Speaker 8 <i>Role of selenoproteins in stress erythropoiesis</i> Robert Paulson Penn State University, USA

	BARC, India		
	Invited Speaker 3 <i>Ionic profiling of patients with colorectal cancer</i> Anatoly Skalnyy Orenburg State University, Russia	Invited Speaker 6 <i>Interactions of a selenium analog of glutathione with biomolecules</i> Michio Iwaoka Tokai University, Japan	Invited Speaker 9 <i>Nutritional and molecular approaches to modulate intestinal iron absorption in iron-deficiency and iron-overload-related disorders</i> James Collins University of Florida, USA
10:45 AM to 11:00 AM	Coffee/ Tea Break		
11:00 AM to 11:45 AM	Plenary Lecture 2 <i>Zinc supplementation in diabetes and prediabetes, current knowledge and challenges</i> Manuel Ruz, University of Chile, Chile <i>Chair: Himanshu Pathak/Raghavendra Bhatta (Alt Chair: A Sahoo)</i>		
11:45 AM to 12:00 PM	Lightening Talks		
12:00 PM to 12:45 PM	Plenary Lecture 3 <i>The trace element-dependent thyroid hormone system - Novel deiodinase selenoenzyme inhibitors</i> Joseph Köhrle Charite Hospital, Germany <i>Chair: Nanda Kumar</i>		
12:45 PM to 1:45 PM	Lunch and Poster		
1:45 PM to 3:00 PM	Scientific Session 4 "Selenium derivatives and organometallic biochemistry" Hall 2 <i>Chair: Vimal Jain</i> <i>Co-Chair: Indira Priyadarsini</i>	Scientific Session 5 "Reproduction" Hall 3 <i>Chair: NKS Gowda</i> <i>Co-Chair: Rajeshwara Achur</i>	Scientific Session 6 "Neurobiology" Hall 4 <i>Chair: Marla Berry</i> <i>Co-Chair: Rajendran</i>

	Invited Speaker 10 <i>Antioxidant activity and cytotoxicity of selenium incorporated biologically inspired N-heteroaryl compounds</i> Vimal Jain BNRS, India	Invited Speaker 12 <i>Boron as additive protects sperm motility and mitochondrial membrane potential during cryopreservation of jersey semen</i> Selvaraju S NIANP, India	Invited Speaker 14 <i>Selenium, sex, stress, brains and energy.</i> Marla Berry University of Hawaii, USA
	Invited Speaker 11 <i>Probing one- electron transfer reactions in selected trace elements</i> Indira Priyadarshini University of Mumbai, India	Invited Speaker 13 <i>Associations of trace elements with reproductive disorders</i> Ashutosh Halder All India Institute of Medical Sciences, New Delhi, India	Invited Speaker 15 (Remote) <i>Role of astrocytic selenoprotein T in synaptic plasticity of the visual cortex</i> Jiang-Hong Zhu Wenzhou Medical University, China
	Trainee Abstract 1 15 min Talk	Trainee Abstract 2 15 min Talk	Trainee Abstract 3 15 min Talk
3:00 PM to 3:15 PM	Coffee/ Tea Break		
3:15 PM to 4:00 PM	Plenary Lecture 4 <i>A zinc sensing receptor in epithelial function and disease</i> Michal Hershfinkel Ben-Gurion University of the Negev, Israel <i>Chair: M. Chandra Prabha</i>		
4:00-	Return to hotels; dinner on your own		

Sunday, November 10, 2024			
8:30 AM to 9:15 AM	Plenary Lecture 5 <i>Elemental Escorts: Secret Lives of Trace Element Transporters</i> Mitch Knutson University of Florida, USA <i>Chair: H Pushpa</i>		
9:15 AM to 10:45 AM	Scientific Session 7 “Trace Element Transport” Hall 2 <i>Chair: Mick Petris</i> <i>Co-Chair:</i>	Scientific Session 8 “Environmental Stress” Hall 3 <i>Chair: Som Mukhopadhyay</i> <i>Co-Chair: Radha Dayanidhi</i>	Scientific Session 9 “Antimicrobial Activities” Hall 4 <i>Chair: Amit Singh</i> <i>Co-Chair: Muktha H</i>
	Invited Speaker 16 <i>Targeting oxygen homeostasis to treat diseases of copper metabolism</i> Michael Petris University of Missouri School of Medicine, USA	Invited Speaker 19 <i>BTBD9 attenuates manganese-induced oxidative stress and neurotoxicity</i> Michael Aschner Albert Einstein College of Medicine, USA	Invited Speaker 22 <i>Fe-S cluster biogenesis and regulation regulates persistence of M. tuberculosis</i> Amit Singh Indian Institute of Science Bengaluru, India
	Invited Speaker 17 <i>Hepatic copper overload impairs selenium homeostasis</i> Anna Kipp Max Planck Jena, Germany	Invited Speaker 20 <i>PHD2-HIF-SLC30A10 define a mammalian manganese sensing and response pathway (Neuro)</i> Som Mukhopadhyay U. Texas Austin, USA	Invited Speaker 23 <i>Selenium and bacteria: one element to fight them all</i> Daniel Plano University of Navarra, Spain
	Invited Speaker 18 <i>Copper biology and medicine</i> Vishal Gohil	Invited Speaker 21	Invited Speaker 24

	Texas A&M, USA	<i>The importance of selenium for understanding symptoms of fatigue</i> Lutz Schomburg, Charite, Germany	<i>Nanotechnology: A recent tool to improve trace mineral bioavailability in farm animals</i> Rajendran NIANP, Bengaluru, India
10:45 AM to 11:00 AM	Coffee/ Tea Break		
11:00 AM to 11:45 AM	Plenary Lecture 6 Functional crosstalk between selenoproteins TXNRD1 and GPX4 Elias Arner Karolinska Institute, Sweden Chair: P. R. Krishnaswamy (Alt: Anna Kipp)		
11:45 AM to 12:00 PM	Lightening Talks		
12:00 PM to 1:00 PM	Keynote Lecture Zinc in Immunosenescence and Malnutrition Lothar Rink RWTH, Aachen, Germany Chair: Girish Kirimanjeswara		
1:00 PM to 2:00 PM	Lunch and Poster (TEMA Parent Committee Meeting)		
2:00 PM to 3:30 PM	Scientific Session 10 "Cancer II" Hall 2 Chair: Alan Diamond Co-Chair:	Scientific Session 11 "Trace elements and microbiota" Hall 3 Chair: Yatrik Shah Co-Chair: N. Ramesha	Scientific Session 12 "Oxidative stress response" Hall 4 Chair: Roger Sunde Co-Chair: Amit Kunwar
	Invited Speaker 25 The role of SELENOF in Cancer	Invited Speaker 28	Invited Speaker 31

	<p>Irida Kastrati Loyola University Chicago, USA</p>	<p><i>Integration of cellular metabolism to intestinal iron absorption</i> Yatrik Shah University of Michigan School of Medicine, USA</p>	<p><i>Heavy metals induced toxicity among E-waste workers: A cross-sectional study</i> Rajeshwara Achur, Kuvempu University, India</p>
	<p>Invited Speaker 26 <i>Selenium, Selenoproteins and Prostate Cancer Mortality</i> Alan Diamond University of Illinois, USA</p>	<p>Invited Speaker 29 <i>Targeting NLRP3 to alleviate iron supplements-induced adverse effects in IBD</i> Matam Vijay-Kumar University of Toledo, USA</p>	<p>Invited Speaker 32 <i>Biochanin-A and phloretin mitigate arsenic and chromium-induced renal damage via modulating oxidative stress and SIRT1/NRF2/HO-1/NQO1 pathway</i> Gyanendra Singh ICMR- NIOH, India</p>
	<p>Invited Speaker 27 <i>Sodium selenite-induced cell death is mediated by copper and partially resembles the ferroptosis pathway</i> Elena Sergeeva Harvard Medical School, USA</p>	<p>Invited Speaker 30 <i>The Interplay between dietary selenium deficiency, gut microbiota, and diabetes in mouse aging</i> Wen-Hsing Cheng Mississippi State University, USA</p>	<p>Invited Speaker 33 <i>Higher dietary zinc modulates antioxidant status, cytokine levels, and immune response of rats under heat stress condition</i> Sunil Jadhav Ind Veterinary Res Inst, India</p>
3:30 PM to 3:45 PM	Coffee/ Tea Break		
3:45 PM to 4:30 PM	<p>Plenary Lecture 7 <i>Unraveling the links between iron status and Diabetes Mellitus: Clinical and therapeutic implications</i> Miguel Arredondo University of Chile, Chile <i>Chair: Krishnamurthy Jayanna</i></p>		

4:30 PM to 5:00 PM	Break
5:00 PM to 6:00 PM	Cultural Program by the students of MSR Institutes of Education
6:00 PM to 7:00 PM	Break (Transport back to the hotels; pick up for the banquet)
7:00 PM to 9:00 PM	Banquet
Bus back to hotels	

Monday, November 11, 2024	
6:30 AM to 8:30 PM	Tour- Somanathpur and Mysuru Breakfast on the way (Near Mandya) Somanathapura Temple (a 13 th C; UNESCO World Heritage Site) Mysore Palace Lunch at CSIR- Central Food Technological Research Institute (CFTRI) Sula Winery Visit on the way & light snacks Back to Bengaluru Price per person: INR 5000 per person.
Dinner on your own	

Tuesday, November 12, 2024			
8:30 AM to 9:15 AM	Plenary Lecture 8 <i>"Crowdoxidation" to unexpected annulation and beyond: continued fun with organochalcogenide containing fluorescent probes</i> David Churchill KAIST, Republic of Korea Chair: Venkatarathnam Naidu		
9:15 AM to 10:45 AM	Scientific Session 13 "Trace element metabolism and transport" Hall 2 Chair: Yoshiro Saito Co-Chair: Uli Schweizer	Scientific Session 14 "Tracking Trace Elements" Hall 3 Chair: Joanna Szpunar Co-Chair: Sunil Jadhav	Scientific Session 15 "Diabetes and Obesity" Hall 4 Chair: Lucia Seale Co-Chair: Swathi D
	Invited Speaker 34 <i>Selenium metabolism for selenoprotein synthesis- its relation to biological defense and diseases</i> Yashiro Saito Tohoku University, Japan	Invited Speaker 37 <i>Advances in selenium speciation analysis in established and emerging food supplements</i> Joanna Szpunar UPPA-CNRS, France	Invited Speaker 40 <i>Selenium metabolism in brown adipocyte physiology</i> Lucia Seale University of Hawaii, USA
	Invited Speaker 35 <i>Effects of salinity on the transcriptional regulation of trace metal transporters in tilapia</i> Andre Seale	Invited Speaker 38 <i>Selenosugars, and selenium metabolomics and metabolism from deficiency to high selenium status</i> Roger Sunde	Invited Speaker 41 <i>Iron-deficiency anemia and obesity</i> Manju Reddy Iowa State University, USA

	University of Hawaii, USA	University of Wisconsin, USA	
	<p>Invited Speaker 36 <i>Impact of selenium on pregnancy and childbirth in association with thyroid stimulating hormone and oxidative stress</i> Suchetha Kumari Nitte Institute of Medical Sciences, India</p>	<p>Invited Speaker 39 <i>A novel approach to study trafficking of essential trace elements</i> Ryszard Lobinski UPPA-CNRS, France</p>	<p>Invited Speaker 42 <i>Copper in vascular health and disease</i> Irina Korichneva University of Picardie Jules Verne, France</p>
10:45 AM to 11:00 AM	Coffee/ Tea Break		
11:00 AM to 11:45 AM	<p>Plenary Lecture 9 <i>Unlocking hidden potential: Exploring novel selenoenzyme and unique selenium metabolic pathway in bacteria</i> Hisaaki Mihara Ritsumeikan University, Japan <i>Chair: R N Lakshmikanth</i></p>		
11:45 AM to 12:30 PM	<p>Plenary Lecture 10 <i>Probing biological copper in the subfemtomolar range</i> Christoph Fahrni Georgia Tech, USA <i>Chair: David Churchill</i></p>		
12:30 PM to 1:15 PM	<p>Lunch and Learn; <i>Speaker: Piyush Deokar, Thermo Fisher, Analytical tools for trace elemental analysis at high accuracy and precision</i>; <i>Moderator: Ryszard Lobinski</i></p>		
1:15 PM to 2:00 PM	<p><i>Zinc status biomarkers: Long quest for an ideal candidate</i> John Beattie, Rowett Institute, University of Aberdeen, UK <i>Chair: Vasantha Kumar Bhaskara</i></p>		

2:00 to 2:45 PM	Plenary Lecture 11 <i>Non-canonical roles and mechanisms of trace metal-containing redox proteins</i> Xingen Lei, Cornell University, USA Chair: Ramya Kumari BSM		
3:00 PM to 4:15 PM	Scientific Session 16 “Chemistry II” Hall 2 Chair: Yasu Ogra Co-Chair: Hareesh Kumar P	Scientific Session 17 “Pathophysiology” Hall 3 Chair: Robert Paulson Co-Chair: Prasanna Kumar SG	Scientific Session 18 “ ” Hall 4 Chair: Yoshiro Saito Co-Chair: Malini M R
	Invited Speaker 43 <i>Methylation metabolism of chalcogen elements</i> Yasumitsu Ogra Chiba University, Japan	Invited Speaker 45 <i>Pathophysiological analysis of metaphyseal dysplasia in a selenoprotein GPx4 deficient mouse model</i> Hirotaki Imai, Kitasato Univ., Japan	Invited Speaker 47 <i>Assessment of zinc bioavailability from bio-fortified rice: An in vivo rat study</i> N. Ramachandran NIANP, India
	Invited Speaker 44 <i>Biomimetic Studies on Metal Homeostasis and Detoxification</i> Gouriprasanna Roy Indian Institute of Technology, Tirupati, India	Invited Speaker 46 <i>Selenization of the Small Molecule Drug Structures</i> Arun Sharma Penn State College of Medicine USA	Invited Speaker 48 <i>Importance of trace elements and their characterization techniques in different high temperature alloys</i> Dheepa Srinivasan Ramaiah University, Bengaluru, India
	Trainee Abstract 4	Trainee Abstract 5	Trainee Abstract 6
4:15 PM to 4:30 PM	Coffee/Tea Break		
4:30 PM to 5:00 PM	Closing Ceremony, Main Auditorium		
5:00 PM to 6:00 PM	Break and Transport back to hotels; Dinner on your own. Have a safe trip back!		

November 9; Trainee Posters

Poster #	Presenter	Title
1	Abubakar Karim Adam	Assessing nutrient retention and bioavailability in biofortified millets: A focus on low-temperature processing
2	Amruthavarshini S N	Role of staple food fortification in combating micronutrient deficiency
3	Arshiya Dewan	Dissecting the role of selenoprotein W in the pathogenesis of tularemia
4	Haritha P K	Studies on biofortification and bioaccessibility of zinc and iron in wheatgrass
5	Indumathi M C	Selenium ameliorates acetaminophen-induced oxidative stress via MAPK and Nrf2 pathways in mice
6	Kanako Sowa	Kinetic analysis of TmsA, a key enzyme in trimethylselenonium demethylation that drives environmental selenium cycling
7	Nanditha Saravana	Method for extraction of heavy metal from dental calculus
8	Prakruthi M	Development and characterization of zinc rich ready to eat structured supplementary food for children
9	Sagar Kumar	Selenium analogues of α -Lipoic acid – Effect on activation of eNOS and their Antioxidant Properties
10	Shailaja Ananda Kumar	Swarna Bindu – An ancient approach to modern disease management
11	Soumya B	Bacterial lipase activity could be altered by incorporation of bivalent cations

November 9, 2024; Non-Trainee Posters

12	Gopi M	Maternal supplementation of organic zinc improved offspring's gut health in broiler chickens
13	Muneendra Kumar	Dietary chromium supplementation in young dairy calves reduces the risk of calf diarrhea by ameliorating insulin response, antioxidant status and immune response
14	Daniel Plano	Synthesis of novel selenocompounds as promising bactericidal compounds
15	Rajendran	<i>Cymbopogon citratus</i> -inspired zinc oxide nanoparticles: Synthesis, characterization and its biological assessment
16	Sowjanyaalakshmi	Impact of <i>Limosilactobacillus reuteri</i> and Jerusalem artichoke synbiotics on immune response and serology in Wistar rats

November 10, 2024; Trainee Posters

Poster #	Presenter	Title
1	J. Aishwarya	Evaluation of selenium functionalized nano composite in the cellular models of GBM
2	Catherine M S B	Phytoferritin from plant derived nanovesicles as a novel bioavailable source of iron to treat anemia
3	Deborpita Sarkar	Selenium and immune checkpoint inhibition in acute myeloid leukemia
4	Kaneez Haleema	Impact of protein and micronutrient blend on the characteristics of cookies made with whole wheat flour
5	Haruka Kamide	Intracellular formation of submicrometer-sized spherical elemental selenium by a novel selenite-reducing bacterium isolated from seleniferous soil
6	Krishna Chirag Shah	Screening of anti-aging molecules of bacteria using computational approach
7	Manjunatha	Minerals associated sperm-expressed genes majorly regulate energy production process and motility
8	Minati Nayak	Diseleno-albumin, a drug free therapeutic system induces apoptosis through mitochondrial derived reactive oxygen species in lung cancer cells
9	Neha Jain	Turn-On fluorescent probe detection for fluoride; in-vivo, in-vitro, and enzymatic studies
10	Nikyasana Mayengbam	Chemical speciation and total metal contents of Fe, Cu, Ni, Zn, in edible bamboo shoots of Manipur, Northeast India
11	Sherin G R	Development of antioxidant nanozymes with antiplatelet activity for prevention of thrombosis
12	Swetha Kamatam	Selenium mitigates Caerulein and LPS-induced severe acute pancreatitis by Inhibiting MAPK, NF-kB and STAT3 signalling via the Nrf2/HO-1 pathway

November 10, 2024; Non-Trainee Posters

Poster #	Presenter	Title
13	K. Giridhar	Correction of zinc deficiency in sheep by feeding zinc biofortified maize stover
14	Girish Kirimanjeswara	Selenoproteins contribute to peripheral follicular B cell homeostasis by modulating cellular ROS levels
15	Arvind Korwar	Application of mass spectrometry-based proteomics in the analysis of trace element modified proteins: A case of selenoproteins
16	K. Sandeep Prabhu	The impact of sodium selenite and seleno-L-methionine on stress erythropoiesis in a murine model of hemolytic anemia