

Scientific Program

SUNDAY, 07 JULY 2024			
14h00	Conference registrations open (Venue: Makhulu Room)		
16h00-16h30	Opening Ceremony by Prof. Bernard Nthambeleni, Vice Chancellor and Principal, University of Venda (Venue: Safari Room)	Addmore Shonhai, Chair of LOC of the 28 th SASBMB congress	
16h30-18h30	PLENARY SESSION 1 (Venue: Safari Room) Chair: Francois van der Westhuizen		
16h30-17h15	Humanity's ongoing battle with infectious disease: Malaria as a case study	Kiaran Kirk, Australian National University, IUBMB Plenary Speaker	
17h15-18h00	An ACE in the hole: Challenges and triumphs of structure-based drug discovery in cardiovascular disease	Ed Sturrock, University of Cape Town, SASBMB Gold Medal Recipient	
18h00-18h30	How One Health underpins the African microbiome	Thulani Makhalanyane, Stellenbosch University, SASBMB Silver Medal Recipient	
18h30	Cocktail Function		
MONDAY, 08 July 2024			
07h00-07h50	Sponsor/exhibitor Breakfast Symposium: Topic to be provided		
08h00-10h15	PLENARY SESSION 2 (Venue: Safari Room) Chair: Addmore Shonhai		
08h00-08h45	Hsp70 chaperones in protein folding and regulation of the heat shock response: unfolding and pulling	Matthias P. Mayer, Heidelberg University, Germany	
08h45-09h15	Pharmacogenomics: integration of "omics" in understanding treatment response	Collet Dandara, University of Cape Town	
09h15-09h45	Human immunodeficiency virus drug resistance in northern South Africa: 2015-2020	Pascal Bessong, University of Venda	
09h45-10h15	Biochemical mechanisms of antimicrobial action of natural products isolated from some selected medicinal plants from Zimbabwe	Stanley Mukanganyama, University of Zimbabwe	
10h15-10h25	Promotion of the 2027 IUBMB Congress to be held in Cape Town	Ed Sturrock, 2027 IUBMB LOC Chair	
10h25-11h00	Tea/Coffee Break (Placing of posters)		
11h00-12h30	PARALLEL SESSION 1		
	Venue: Rose Room	Venue: Day Lily	Venue: Safari Room
	Protein Biochemistry Chair: Aileen Boshoff	Computational and Structural Biology Chair: Wolf-Dieter Schubert	Omics Sciences Chair: Amidou Samie
11h00-11h30	Adrienne Edkins (RU) HOP/STIP1 is required for KSHV lytic replication	Trevor Sewell (UCT) Increasing the thermostability of a cyanide converting nitrilase	Marianne Venter (NWU) Using a multi-omics approach to investigate the tissue specific presentation of mitochondrial disease: What have we learned?
11h30-11h45	Tendamudzimu Dongola (UNIVEN) Human granzyme B binds <i>Plasmodium falciparum</i> Hsp70-x and mediates antiplasmodial activity in vitro	Darius Martin (UWC) Selection of aptamers against a stress-induced biomarker, TAGLN2 and <i>in silico</i> binding validation	Mamosa Ngcala (UCT) Desiccation responses in early and late stages of seedling development across three Xerophyta species
11h45-12h00	Charity Tshimbane (SU) Progesterins used in injectable contraception differentially regulate adiponectin expression	Frances Ayres (Wits) Structural characterisation of the interaction between SARS-CoV-2 neutralising antibodies and their target antigens by x-ray crystallography and cryo-EM	Vuyiseka Nkqenkqa (CPU) Correlation of <i>Warburgia salutaris</i> volatile essential oils GC-MS profile with transcriptomic data
12h00-12h15	Keiran Mcinnes (Wits) A clot to uncover: FOXP3 and SARS-CoV-2 nucleocapsid interactions and their effect on DNA binding	Asanda Nyide (UKZN) The <i>Mycobacterium tuberculosis</i> complex transcriptome is differentially regulated by non-coding RNAs that can be explored for novel TB biomarkers	Pfano Maphari (UJ) Combining LC-MS/MS-molecular networking metabolite profiling with networking pharmacology to predict the

			antimalaria properties and molecular mechanisms of three <i>Asparagus</i> species in alleviating malaria symptoms
12h15-12h30	Mukhethwa Munzhedzi (UNIVEN) Prevalence and molecular profiling Of <i>Plasmodium falciparum</i> Kelch 13 in Ha-Lambani area, Limpopo province, South Africa	Kurt Wibmer (Wits) A monoclonal antibody that neutralizes long and short chain three finger snake venom neurotoxins	Xavier Gallart-Palau (IRBLleida, Spain) Aging-associated oxidative stress demonstrates ability to disrupt cell signaling mediated by serine phosphorylation through the effect of cysteine trioxidation
12h30-13h30	Lunch. including poster viewing, commercial exhibits		
13h30-14h30	PARALLEL SESSION 2		
	Venue: Rose Room	Venue: Day Lily	Venue: Safari Room
	Protein Biochemistry Chair: Adrienne Edkins	Enzymology and Metabolism Chair: Ed Sturrock	Omics Sciences Chair: Lufuno Mavhandu-Ramarumo
13h30-13h45	Sifiso Luthuli (UNIVEN) Characterization of structure-function features of the R2TP complex of <i>Plasmodium falciparum</i>	Gerda Venter (NWU) Combined oral contraceptives containing ethinyl estradiol and drospirenone alters the endogenous urinary hormone biotransformation profile of premenopausal women	Aida Serra (Universitat de Lleida) Extracellular vesicles discharged by brain cells contribute to revealing insights into the elevated prevalence of dementia in individuals with schizophrenia
13h45-14h00	Mande Goldfein (Wits) FOXP2 forkhead domain, micronutrients, and neurodevelopmental disorders – a potential interaction?	Matthew Markgraaff (SU) The bioactivity of the novel 11-oxygenated androgens is regulated by pre- and post-receptor metabolism	Akhona Myoli (UJ) Charting the cannabis plant chemical space beyond cannabinoids with digitalized LC/MSMS strategies
14h00-14h15	Phindulo Mathobo (UNIVEN) Over-expression of Tn5 transposase and its application in library preparation for next-generation sequencing	Wilson Adeosun (NWU) Characterizing TB-diabetes comorbidity using 1H-NMR metabolomics	Innocent Moagi (UNIVEN) Umbilical cord blood metabolomic profiling to reveal biomarkers of Perinatal complications in the Vhembe district: A cross-sectional study
14h15-14h30	Chanél Blignaut (Wits) Assessing the potential interaction between CBD and TBR1 T-box domain	Nxalati Mkhombo (UCT) Direct regulation of ovarian steroidogenesis by progestins suggests one possible mechanism for hypoestrogenism reported for women on the hormonal contraceptives medroxyprogesterone acetate and norethisterone enanthate	Maitase Mutanda (UNISA) Selection of wheat genotypes using yield components, water use efficiency and major metabolites under drought stress
14h30-15h30	Tea/Coffee (Poster presentations)		
15h30-17h00	PARALLEL SESSION 3		
	Venue: Safari Room	Venue: Day Lily	Venue: Rose Room
	Infectious and Parasitic Diseases Chair: Nicaise Ndam	Enzymology and Metabolism Chair: Paul Kappo	Omics Sciences Chair: Afsatou Traore
15h30-16h00	Dean Goldring (UKZN) The ins and outs and roundabouts of copper in <i>Plasmodia</i> spp. copper metabolism and cytochrome c oxidase assembly	Zander Lindeque (NWU) Extrahepatic reductive stress in mitochondrial complex I deficient mice augmented by ketogenesis	Luciano Willemsse (NWU) Evaluating the effect of a high ω -3 ketogenic diet on survival, mTOR activity, inflammation, and systemic metabolism in a Leigh syndrome mouse model
16h00-16h15	Precious Letebele (UFS) Role of EHT1, encoding octanoyl-CoA:ethanol acyltransferase, in <i>Candida albicans</i> biofilms	Nonso Nnolim (UFH) Biochemical characterization and structural elucidation of keratinolytic protease produced by <i>Bacillus</i> sp. NFH5 growing on keratinous feather	Isac Mabunda (UJ) Proteomic variations between African scorpion venoms and identification of therapeutic properties through in vitro cell line assays
16h15-16h30	Aileen Boshoff (RU) <i>Trypanosoma brucei</i> Hsp70 escort protein regulates the activity of heat shock protein 70	Teboho Mdiniswa (RU) Analysis of the role of carbonic anhydrase enzymes, in the physiology and virulence of <i>Mycobacterium tuberculosis</i>	Stella Eregie (UKZN) Transcriptomic analysis of <i>Scenedesmus vacuolatus</i> : Gene discovery, enzyme identification and metabolic pathway in spent coolant oil waste degradation
16h30-16h45	Monique Williams (UCT) Exploring protein-protein interactions in the mycobacterial iron-sulphur cluster biogenesis system	Karin Terburgh (NWU) Hepatic bioenergetics and metabolism in mitochondrial disease: insights from the Ndufs4 knockout mouse model	Arno Smith (NWU) Targeted metabolomics reveals a potential antidepressant mechanism for adenosine receptor antagonists
16h45-17h00	Daniel Opperman (UP)	Michelle Bisschoff (NWU)	Prasiddhi Parab (DUT)

	Protein arginine methyltransferase inhibitors as tool compounds for interrogating <i>Plasmodium falciparum</i> arginine methylation biology	The biochemical and molecular genetic characterisation of multiple acyl-coenzyme A dehydrogenase deficiency in a Southern African cohort	Identification of potential steroid degrading microbial communities in wastewater through metagenomics
17h00-18h00	SASBMB General Meeting		
TUESDAY, 09 July 2024			
08h00-10h15	PLENARY SESSION 3 (Venue: Safari Room) Chair: Ntakadzeni Madala		
08h00-08h45	Malaria in the Arabian peninsula: Public health status to anti-malarial drug discovery	Greg Blatch, The University of Notre Dame Australia	
08h45-09h15	Proteases as diagnostic and drug targets for the three Ts: Trypanosomes, Theileria and Trichinella	Theresa Coetzer, University of KwaZuluNatal	
09h15-09h45	Multi-faceted health and disease effects of missense mutations: a protein structure perspective	Özlem Tastan Bishop, Rhodes University	
09h45-10h15	Progression of obesity and type 2 diabetes promotes brown adipose tissue dysfunction and impairs the gene expression of batokines	Standiwe Mazibuko-Mbeje, North West University	
10h15-11h00	Tea/Coffee Break (plus poster viewing session 1)		
11h00-12h30	PARALLEL SESSION 4		
	Venue: Day Lily	Venue: Rose Room	Venue: Safari Room
	Infectious and Parasitic Diseases Chair: Dean Goldring	Non-Communicable Diseases Chair: Zander Lindeque	Drug Discovery Chair: Leseilane Mampuru
11h00-11h30	Nicaise Ndam (Institut de Recherche pour le Développement, France) Clinical development of a VAR2CSA-based vaccine for placental malaria: The persistent challenge of antigenic polymorphism	Carmen Pfeiffer (SAMRC) Cardiac, visceral and subcutaneous adipose tissue differences in an experimental model of obesity and type 2 diabetes	Fortunate Mokoena (NWU) Selective targeting of <i>Plasmodium falciparum</i> Hsp90 as an anti-malarial therapeutic strategy
11h30-11h45	Henrico Langeveld (UP) Investigating the biological relevance of aurora kinases during asexual proliferation and sexual differentiation in <i>Plasmodium falciparum</i>	Sana Nkadameng (UNISA) Antiproliferative and morphological effects of the compound Phenylalanine isolated from pumpkin seed in vitro on tumor necrotic alpha induced toxicity and cell injury in lung and liver cancer cells	Candace Davison (RU) Screening and characterisation of novel compounds and their derivatives from South African medicinal plants against triple negative breast cancer cells
11h45-12h00	Ronewa Khumela (UNIVEN) Histo-blood group antigens' phenotypic and genotypic profiles in norovirus infections among children from rural communities in the Vhembe district	Sinenhlanhla Mthembu (NWU) Potential benefits of the dietary compounds, aspalathin, and sulforaphane, in protecting against lipid-induced cardiotoxicity	Annick van Niekerk (UCT) Using antibody-drug conjugates, drug repurposing and molecular docking to target the oncogenic TBX3 in cervical cancer
12h00-12h15	Tyrick Welcome (UP) Proteolysis-targeting chimeras as a novel strategy for targeting epigenetic mechanisms in <i>Plasmodium falciparum</i>	Dimakatso Gumede (UJ) Photobiomodulation at 660 nm improves wound healing in a diabetic cellular model via activation of the WNT/ β -catenin signalling pathway	Halimat Lukman (DUT) Cheminformatics and experimental bioprospection of <i>Citrus aurantifolia</i> essential oil towards the management of diabetes retinopathy
12h15-12h30	Natalie Dicks (UCT) Clinical and <i>in vitro</i> data suggests differential regulation of select growth factors and epithelial barrier function in the female genital tract between progestin-only injectable contraceptives depo-medroxyprogesterone acetate and norethisterone enanthate	Zibele Ndlovu (NWU) Cardioprotection in hearts from obese rats is mediated via an exchange protein directly activated by cyclic AMP (Epac) - ERK pathway	Adivhaho Khwathisi (UNIVEN) Bioprospecting of soil-borne microorganisms and chemical dereplication of their anti-microbial constituents with the aid of UPLC-QTOF-MS and molecular networking approach
12h30-14h00	Lunch (posters plus exhibition)		
14h00-15h00	PARALLEL SESSION 5		
	Venue: Day Lily	Venue: Rose Room	Venue: Safari Room
	Infectious and Parasitic Diseases Chair: Greg Blatch	Non-Communicable Diseases Chair: Carmen Pfeiffer	Drug Discovery Chair: Fortunate Mokoena
14h00-14h15	Amidou Samie (UNIVEN) Impact of host genetic polymorphism at IL-6 gene promoter at position -174G/C on the occurrence of HBV and HCV among HIV/AIDS patients in Limpopo province, South Africa	Ntombikayise Xelwa (Wits) Synergistic effects of the combination of SPP1 knockdown and Gemcitabine treatment on pancreatic cancer cells	Naveen Kumar (DUT) Production and characterization of antimicrobial peptide mobilisin from <i>Bacillus mobilis</i> with broad spectrum antibacterial activity

14h15-14h30	Laura Bishop (UP) Immunomodulation by adjuvant choice: Impact for tick vaccine formulation	Lucy Macharia (UCT) The transcriptional regulation of TBX3 by the c-Myc/E6/E7 axis and targeting this axis for the treatment of HPV-positive cervical cancer	Mihlali Vuyo Mlaza (CPUT) Marine-derived chromomycin A5: a novel strategy to treat TBX2-driven rhabdomyosarcoma
14h30-14h45	Lisa Arrah Mbang Tambe (UNIVEN) Genomic epidemiology of SARS-COV-2 and other respiratory viruses detected in wastewater: 18-months surveillance in Limpopo, South Africa	Pamela Maimela (UCT) High-throughput microarray analysis of IgG and IgA autoantibody responses in pancreatic ductal adenocarcinoma	Sandile Mthembu (UKZN) Targeting the pupylation cascade system of <i>Mycobacterium tuberculosis</i> for the development of alternative anti-tubercular drugs
14h45-15h00	Funanani Thagulisi (SAMRC) Marine bacterial symbionts' immunomodulatory and antimycobacterial activity	Thabe Matsebatlela (UL) Didox modulates AHR ligand-induced oxidative stress, Cyp1A1 induction, and AHR-activity in RAW 264.7 murine macrophages	Mthokozisi Nxumalo (UKZN) Hexaazacyclooctadecane (Hexacyclen) induced nitrosative stress and downregulated NF-κB cell survival pathway in colorectal adenocarcinoma (Caco2) cells
15h00-16h00	Tea/Coffee plus poster viewing session 2		
16h00-17h30	PARALLEL SESSION 6		
	Venue: Safari Room	Venue: Rose Room	Venue: Day Lily
	Infectious and Parasitic Diseases Chair: Ofentse Poee	Non-Communicable Diseases Chair: Standiwe Mazibuko-Mbeje	Phytomedicine Chair: Stanley Mukanganyama
16h00-16h30	Lizette Koekemoer (Wits) Unveiling the maturation process of <i>Anopheles funestus</i> : Transcriptional analysis of a key African malaria vector	Colleen O'Ryan (UCT) Mitochondrial dysfunction: From cohort screening to the relationship between metabolism and neurodevelopment in vitro	Ananias Kgopa (SMU) Effect of <i>Cinnamomum cassia</i> stem-bark extracts on the expression of genes involved in synthesis and secretion of insulin in RIN-m5F cell lines
16h30-16h45	Afsatou Traore (UNIVEN) ADME polymorphism found in TB patients from healthcare facilities in the Vhembe District	Alexandre Delport (UKZN) Amyloid precursor protein, and its C-terminal fragment, are upregulated in kidney and adipose tissues in a diet-induced obesity model	Mashilo Matotoka (UL) Utilization of CRISPR interference and medicinal plant extracts to validate and target the shikimate pathway of <i>Mycobacterium tuberculosis</i>
16h45-17h00	Nerissa Bloch (Wits) Heat shock factor (HSF) expression and its effect on life table parameters in the main African malaria vector, <i>Anopheles funestus</i>	Leonardo Alves de Souza Rios (UCT) HIV infection and the risk of cancer - the development of a model to study the oncogenic effects of the HIV-1 Tat protein in lymphoma	Nomthandazo Ndlangamandla (UP) <i>Bauhinia bowkeri</i> extracts exhibit the potential to inhibit the polyol pathway and low-density lipoprotein modification <i>in vitro</i>
17h00-17h15	Ontefetse Plaatjie (NWU) Targeted metabolic profiling of acylcarnitines in paediatric tuberculous meningitis	Xolisiwe Sebutsoe (UJ) The effect of cannabidiol-nanoparticle combination therapy on cancer cell lines	Ndzalama Sithole (UL) Antibacterial and anti-biofilm of acetone extracts of selected medicinal plants and their selectivity indices
17h15-17h30	Thabo Masoga (UNIVEN) Characterization of the PFF1010c, a type IV J domain protein of <i>Plasmodium falciparum</i>	Xolisa Nxele (UWC) Associations of anaemia with blood pressure in women of reproductive age: a cross-sectional study in Johannesburg, South Africa	Kgomotso Poopedi (UL) The effect of the leaf water extract of <i>Ozoroa paniculosa</i> on MDA-MB-231 breast cancer cells in an obesity microenvironment
18h30	Gala dinner		

WEDNESDAY, 10 July 2024			
08h00-10h15	PLENARY SESSION 4 (Venue: Safari Room) Chair: Jo-Anne de la Mare		
08h00-08h45	Partnerships for Children's Heart Diseases in Africa (PROTEA): Investigations from bench to bedside to community	Liesl Zühlke, SAMRC	
08h45-09h30	Cocoa chemistry - from bean to bar to human	Nikolai Kuhnert, Constructor University, Germany	
09h30-10h15	Venomics to the drug discovery for Alzheimer's disease	Tomohisa Ogawa, Tohoku University, Japan	
10h15-11h00	Tea/Coffee Break		
11h00-12h30	PARALLEL SESSION 7		
	Venue: Rose Room	Venue: Day Lily	
	Venue: Safari Room		
	Plant, Animal and General Biotechnology Chair: Rebamang Mosa	Non-Communicable Diseases Chair: Mduduzi Mokoena	Phytomedicine Chair: Adellé Burger
11h00-11h30	Takalani Mulaudzi (UWC) Nucleotide cyclase's in plants: The role of AtNOGC1 in stress response	Saheed Sabiu (DUT) Unveiling the mechanism of action of corn silk in type 2 diabetes intervention through integrated network pharmacology and down regulation of ADORA1 and GABBR1	Zukile Mbita (UL) Anticancer mechanisms of medicinal plants: Modulation of alternative splicing
11h30-11h45	Eastonce Gwata (UV) <i>In silico</i> study of heat shock proteins from pigeonpea (<i>Cajanus cajan</i>) seed	Ruvesh Pillay (Wits) Investigating the role of KS-01 as an anti-cancer agent in colorectal cancer	Lee-Maine Spies (SU) Evaluation of the effects of rooibos extracts on estrogen receptor-positive breast cancer
11h45-12h00	Prashant Bhagwat (DUT) Assessment of the probiotic potential of LAB strains isolated from a traditional African fermented milk beverage	Tsholofelo Portia Moloi (NWU) Effect of <i>Moringa oleifera</i> on palmitate-induced mitochondrial dysfunction in C2C12 skeletal muscle cells	Musawenkosi Ndlovu (UP) Triterpenoids from <i>Protorhus longifolia</i> exhibit hypocholesterolemic potential via regulation of cholesterol biosynthesis and stimulation of LDL uptake in HepG2 cells
12h00-12h15	Marshall Keyster (NWU) Methylglyoxal improves zirconium stress tolerance in <i>Raphanus sativus</i> seedling shoots by restricting zirconium uptake, reducing oxidative damage, and upregulating glyoxalase	Ruth Aronson (Wits) Establishing South African patient-derived intestinal organoids as an advanced model to explore molecular markers of colorectal cancer	Caryn Morgan (UNISA) Potential antioxidant and protective effects of the aqueous leave extract of <i>Dietes iridioides</i> (Wood Iris) <i>in vitro</i> on interleukin-1 Beta induced-toxicity on human lung carcinoma A549 cells
12h15-12h30	David Tinarwo (UNIVEN) Optimising biogas production from organic waste through co-digestion techniques: A field-based study	Tasvi Daya (Wits) Investigating the effects of cholesterol-depletion on pancreatic cancer and drug resistance <i>in vitro</i> and <i>in vivo</i>	Khumisho Dithebe (UL) Antibacterial, antioxidant and anti-inflammatory activities of culturable fungal endophytes of <i>Kirkia acuminata</i> leaves
12h30-12h45	Grace Abel (DUT) Optimisation of green solvent-microwave-assisted pretreatment for enhanced sugar recovery from softwood biomass	Mishka Simons (SUN) Progesterins used in injectable contraception differentially downregulate the expression of hepatic sex hormone binding globulin	S'thandiwe Magwaza (UKZN) <i>In vitro</i> and <i>ex vivo</i> antidiabetic, anti-obesity and antioxidative effects of green seaweeds (<i>Ulva rigida</i> and <i>Ulva fasciata</i>)
12h45-13h00	Conference closing and poster/presenter prizes		Dr. Shonisani Tshidino (UNIVEN); Dr. Pirwana Chokoe (UL); Addmore Shonhai (UNIVEN)
13h00	Lunch to go		

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