

SASBMB-FASBMB 2018

8 - 11 July 2018

North-West University, Potchefstroom

PROGRAMME

SUNDAY, 8 JULY

10:00	REGISTRATION FOR NMR METABOLOMICS WORKSHOP OPENS	Sports Village
11:00 - 16:30	PRE-CONFERENCE WORKSHOP, REGISTRATION AND OPENING	Venue: Sports Village
11:00 - 15:30	NMR Metabolomics Workshop	Sports Village
14:30	REGISTRATION FOR CONFERENCE OPENS	Sanlam Auditorium foyer
16:00 - 16:30	Opening Ceremony	Sanlam Auditorium
16:30 - 18:30	PLENARY SESSION 1 Chair: Peter Meissner	Venue: Sanlam Auditorium
16:30 - 17:15	<i>Systems medicine and molecular phenotyping approaches to problems in precision medicine and public healthcare.</i>	Jeremy Nicholson (United Kingdom)
17:15 - 18:00	SASBMB Gold Medal Lecture	Trevor Sewell (UCT)
18:00 - 18:30	<i>Insights on HIV cure challenges from treatment of hyperacute infection.</i>	Thumbi Ndung'u (UKZN)
18:30	Cocktail Function	Sanlam Auditorium foyer
20:00	SASBMB Council Meeting	Meet in the Sanlam Auditorium Foyer

MONDAY, 9 JULY

07:00 - 07:50	Separations Breakfast Symposium: <i>The Future of Automation for Your NGS, Biobanking, PCR and Extraction Applications</i> . Juan Gijzelaar	Sanlam Auditorium
08:00 - 10:15	PLENARY SESSION 2 Chair: Erick Strauss	Venue: Sanlam Auditorium
08:00 - 08:45	<i>Harnessing biological insight to accelerate tuberculosis drug discovery.</i>	Valerie Mizrahi (UCT)
08:45 - 09:15	<i>Empirical evidence for indigenous knowledge on HIV/AIDS useful plants.</i>	Namrita Lall (UP)
09:15 - 09:45	<i>Targeting LRP/LR for treatment of metastatic cancer, Alzheimer's disease and novel anti-ageing strategies through modification of telomerase activity.</i>	Stefan Weiss (Wits)
09:45 - 10:15	Important Announcements.	Organizers
10:15 - 11:00	Tea/Coffee Break (<i>All posters to be put up and first viewing without presenters</i>)	E5 (10 min walk to venue)

11:00 - 12:30	PARALLEL SESSION 1			Venue: E5 (basement floor)
	Lecture Room 1 <i>Systems Biology, Omics and Bioinformatics</i> Chair: Roan Louw	Lecture Room 2 <i>Infectious Diseases</i> Chair: Patrick Arbutnot	Lecture Room 3 <i>Drug Discovery & Medicinal plants</i> Chair: Ed Sturrock	
11:00 - 11:30	Mari van Reenen (NWU) <i>Variable selection and classification in the presence of observations below the detection limit.</i>	Andrea Papadopoulos (Wits) <i>A novel metallo-endopeptidase required for peptidoglycan remodelling during osmolarity changes in M. tuberculosis.</i>	Stanley Mukanganyama (Zimbabwe) <i>Antimicrobial activity as a new frontier in the biological activities of the triterpenoids tormentic acid and betulinic acid isolated from Callistemon citrinus.</i>	
11:30 - 11:45	Volker Kruft (Germany) <i>Comprehensive acquisition by mass spectrometry and comparison of omics data: progress towards personalized medicine.</i>	Du Toit Loots (NWU) <i>TB or not TB: New metabolomics biomarkers better characterizing and diagnosing tuberculosis.</i>	Cuthbert Kibungu (FH) <i>Antimicrobial potential of crude extracts obtained from marine invertebrates species collected from Phillip's Reef at Algoa Bay in Port Elizabeth in the Eastern Cape Province.</i>	
11:45 - 12:00	Zander Lindeque (NWU) <i>Metabolomics reveals the depletion of intracellular metabolites in HepG2 cells after treatment with gold nanoparticles.</i>	Fiona van den Berg (Wits) <i>Delivery of antibodies targeting the V2 apex of HIV using adeno-associated virus (AAV) vectors.</i>	Deborah Kajewole (RU) <i>Screening of new artemisinins as cytotoxic modulators of the stress response in triple-negative breast cancer (TNBC) cells.</i>	
12:00 - 12:15	Jarmo Kalinski (RU) <i>High resolution mass spectrometry as a tool for mapping the reservoir of secondary metabolites in complex marine natural product chemical extracts.</i>	Raymond Makola (UL) <i>Lithium attenuate viral load in Rift Valley Fever Virus infected Raw 264.7 macrophage through induction of programmed cell death.</i>	Nthabiseng Moholola (UL) <i>The potential anticancer activity of Commelina benghalensis against breast cancer MCF-7 cell line.</i>	
12:15 - 12:30	Zinandré Stander (NWU) <i>A metabolomics investigation of the altered human metabolome induced by a marathon.</i>	Njabulo Mnyandu (Wits) <i>Engineered Ancestral AAV (Anc80L65) vector carrying primary microRNA mimics effects of long-term HBV inhibition.</i>	Sechene Stanley Gololo (SMHSU) <i>Does exposure to road-dust pollution have effect on the quality of phytochemicals in the leaves and roots of Barleria dinteri?</i>	
12:30 - 13:30	Lunch (and poster viewing)			Outside E5

13:30 - 14:30	PARALLEL SESSION 2			Venue: E5 (basement floor)
	Lecture Room 1 <i>Systems Biology, Omics and Bioinformatics</i> Chair: Du Toit Loots	Lecture Room 2 <i>Infectious Diseases</i> Chair: Aurelia Williams	Lecture Room 3 <i>Drug Discovery & Medicinal plants</i> Chair: Stanley Mukanganyama	
13:30 - 13:45	Tatenda Goche (UFS) <i>Identification of differentially expressed proteins in drought stressed sorghum plants.</i>	Brittany-Amber Jacobs (UCT) <i>Cancer cell behaviour following parasite exposure.</i>	Olurunfemi Raphael Molehin (Nigeria) <i>Antihyperglycemic, antihyperlipidemic and antioxidant effect of White Butterfly (Clerodendrum volubile) leaves in streptozotocin-induced diabetic rats.</i>	
13:45 - 14:00	Raphael Taiwo Aruleba (UZ) <i>Discovery of potent schistosome protein inhibitors: hidden Markov model, site-directed mutagenesis and molecular docking studies.</i>	Tawanda Zininga (UV) <i>Plasmodial Hsp70s as antimalarial drug targets.</i>	Olakunle Sanni (UKZN) <i>Fractions of Azadirachta indica ethanol stem bark extract scavenges free radicals, inhibits key enzyme linked to type 2 diabetes in vitro, abates Fe²⁺ induced oxidative stress in hepatic tissue and enhances muscle glucose uptake ex vivo.</i>	
14:00 - 14:15	Nikita da Camara (UJ) <i>Proteome analysis of isonitrosoacetophenone-treated plant systems.</i>	Dina Coertzen (UP) <i>Redox homeostasis as a novel drug target in asexual Plasmodium falciparum parasites and sexual gametocytes.</i>	Toluwani Tella (NWU) <i>The effect of Psidium guajava aqueous leaf extract on glycogen enzymes and hormone sensitive lipase enzyme in liver and muscle of diabetic rats.</i>	
14:15 - 14:30	Paul Chukwudi Ikwegbue (UZ) <i>Predictive interaction between Hsp70.14 and the RING finger domain of Retinoblastoma binding protein 6: an silico study.</i>	Lauren Eysen (UKZN) <i>Oligopeptidase B-specific antibody fragments: possible diagnostic tool for animal infective trypanosomiasis.</i>	Faith Ajiebabio Ogbolo (Nigeria) <i>Antidiabetic effects of methanolic extract of bitter kola (Garcinia kola) leaves on streptozotocin-induced diabetic rats.</i>	

14:30 - 15:30	Tea/Coffee Break & Poster Viewing 1 (All <i>odd</i> poster numbers, i.e. 1, 3, 5 etc. presenters present)		E5
15:30 - 17:00	PARALLEL SESSION 3		Venue: E5 (basement floor)
	Lecture Room 1	Lecture Room 2	Lecture Room 3
	<i>Gene Regulation and Genomic Dynamics</i>	<i>Inflammation and Immunity</i>	<i>Drug Discovery & Medicinal plants</i>
	Chair: Sandile Fuku	Chair: Nicky Verhoog	Chair: Adrienne Edkins
15:30 - 16:00	Terry Kipkorir (UCT) <i>Riboswitch regulation of methionine metabolism and vitamin B12 uptake in mycobacteria – a role in pathogenesis?</i>	Witness Ramashia (Wits) <i>Transcription analysis of an immune factor in a main African malaria vector Anopheles funestus.</i>	Erick Strauss (SUN) <i>Antimicrobial drug development by systems-driven target assessment: the case of coenzyme A-directed inhibitors.</i>
16:00 - 16:15	Jacek Zawada (Wits) <i>Functional genomics of male Anopheles funestus genitalia rotation.</i>	Ademola Ayeleso (Nigeria) <i>Potentials of allicin on the modulation of inflammatory responses in high-fructose metabolic dysfunction in growing male Wistar rats.</i>	Dikgale Mangokoana (LU) <i>The effects of zinc and newly synthesized 6-nitro-2-(2-(thiophen-3-yl) ethyl) quinoxaline on apoptosis and proliferation of MCF-7 cells.</i>
16:15 - 16:30	Martin Bernert (Wits) <i>Investigating telomere dynamics in oesophageal squamous carcinoma cells using standard and nanoparticle-based assays.</i>	Holisha Moodley (RU) <i>Identifying the binding partners of the scaffold protein hCNK1 in the NF-κB pathway.</i>	Saif Feroz Khan (UCT) <i>Repurposing of commercial drugs that target the oncogenic TBX3 for anti-cancer activity in breast and cervical cancer.</i>
16:30 - 16:45	Rahaba Marima (UL) <i>In silico bioinformatics analysis of cell-cycle related genes in response to Lopinavir/ritonavir (LPV/r) in in vitro human lung cancer models.</i>	Mashudu Given Matumba (NWU) <i>Adiponectin regulation of AMPK on oleanolic acid treated insulin resistance Sprague Dawley rats.</i>	John Takyi-Williams (NWU) <i>Development and validation of liquid chromatography-tandem mass spectrometry (LC-MS/MS) methods for the quantification of two peptide drugs in biological samples.</i>
16:45 - 17:00	Janine Aucamp (NWU) <i>Introducing cell-free DNA: Its origins, characteristics, applications and implications.</i>	Nontobeko Mthembu (UCT) <i>Host immune responses to Pneumocystis murina.</i>	Mthokozisi Simelane (UKZN) <i>The cathepsin L of toxoplasma chronic infection and its endogenous inhibitor, iso-mukaadial acetate.</i>
17:00 - 18:00	SASBMB General Meeting		Lecture Room 1
18:30	Snowflake: Social Function		Snowflake Building

TUESDAY, 10 JULY			
08:00 - 10:15	PLENARY SESSION 3		Venue: Sanlam Auditorium
	Chair: Wolf-Dieter Schubert		
08:00 - 08:45	<i>The structure, assembly and mechanism of mitochondrial complex I.</i>		Ulrich Brandt (The Netherlands)
08:45 - 09:15	<i>Metabolic reprogramming as an emerging strategy for cancer therapies.</i>		Sameh Ali (Egypt)
09:15 - 09:45	<i>The potential of metabolomics as an investigative tool to study plant-microbe interactions at a biochemical level.</i>		Ian Dubery (UJ)
09:45 - 10:15	<i>Altered cellular redox status as a target for cancer chemoprevention by phytopolyphenols and dietary fatty acids - an alternative approach.</i>		Wentzel Gelderblom (CPUT)
10:15 - 11:00	Tea/Coffee Break (and poster viewing)		E5

11:00 - 12:30	PARALLEL SESSION 4		Venue: E5 (basement floor)
	Lecture Room 1	Lecture Room 2	Lecture Room 3
	<i>Structural Biology</i>	<i>Non-communicable Diseases</i>	<i>Plant Biology</i>
	Chair: Trevor Sewell	Chair: Karl Storbeck	Chair: Khalid Fares
11:00 - 11:30	Freeborn Rwere (Zimbabwe) <i>Role of the Asp632 loop of cytochrome P450 reductase in control of NADPH binding and hydride transfer.</i>	Iqbal Parker (UCT) <i>Genomics of oesophageal cancer in Africa.</i>	Omena Ojuederie (NWU) <i>Molecular detection and characterization of maize rhizobacteria for plant growth promoting traits.</i>
11:30 - 11:45	Ed Sturrock (UCT) <i>The development of selective, dual angiotensin-converting enzyme C-domain/nepriylsin inhibitors.</i>	Jo-Anne de la Mare (RU) <i>Investigating novel inhibitors for triple negative breast cancer.</i>	Thandolwethu Taki (FH) <i>SWATH analysis of differentially expressed proteins in resistant (SST374) and susceptible (SST317) wheat cultivars, infested with Russian wheat aphid-SA3 under varying atmospheric CO₂ levels.</i>
11:45 - 12:00	Sinovyuo Nodangala (FH) <i>Expression and kinetic characterization of novel enzymes (catalase and alpha-galactosidase) in red algae from the Algoa Bay region.</i>	Palesa Koatale (NWU) <i>Establishment and characterisation of a mouse xenograft model of human ovarian cancer.</i>	Ndiko Ludidi (UWC) <i>Comparative analyses of the antioxidant enzyme activities of two contrasting sorghum lines in response to drought and heat.</i>
12:00 - 12:15	Wolf-Dieter Schubert (UP) <i>Interdomain interactions within a multimodular xylanase Xyl.</i>	Marianne Venter (NWU) <i>Investigating the prevalence of mtDNA variants in Chronic Fatigue Syndrome patients.</i>	Thembisile Khoza (UJ) <i>Identification of the ergosterol-interacting proteome in the Arabidopsis thaliana plasma membrane.</i>
12:15 - 12:30	Trevor Sewell (UCT) <i>The structure of the cyanide dihydratase (CynD) from Bacillus pumilus.</i>	Anza Thiba (Wits) <i>Differences in microbiome of rat models of cardiovascular diseases.</i>	Josiah Ifie (Nigeria) <i>Biochemical and physiological responses of selected cowpea (Vigna unguiculata) genotypes to elevated iron levels in a ferruginous ultisol.</i>
12:30 - 14:00	Lunch & Lunch Symposium Thermo Fisher Scientific: <i>Target sequencing: Simplified, Applied.</i> Etesria van Dyk.		Outside E5 & Lecture Room 1
12:30 - 14:00	FASBMB Executive Council Meeting		Lecture Room 2

14:00 - 15:00	PARALLEL SESSION 5		Venue: E5 (basement floor)
	Lecture Room 1	Lecture Room 2	Lecture Room 3
	<i>Bioenergetics, Biotransformation and Ageing</i>	<i>Non-communicable Diseases</i>	<i>Cell Biology</i>
	Chair: Rencia van der Sluis	Chair: Emmanuel Mukwevho	Chair: Lesetja Raymond Motadi
14:00 - 14:15	Tertius Kohn (UCT) <i>Understanding skeletal muscle from superior athletes - what makes them so different?</i>	Amber Khan (Wits) <i>Anticancer activity and cell cycle response of novel synthetic high mobility group box 1 inhibitors in colorectal cancer cells.</i>	Zanele Nsingwane (Wits) <i>The biochemical functions of the Retinoblastoma binding protein 6 (RBBP6) isoforms in metabolic reprogramming occurring during carcinogenesis.</i>
14:15 - 14:30	Hayley Miller (NWU) <i>Protection of mitochondrial disease pathology by metallothionein over-expression: a phenotype study.</i>	Natasha Boel (RU) <i>Investigating the role of HSP90 and LRP1 in FN matrix dynamics and its implications in cancer cell migration.</i>	Abantika Chakraborty (RU) <i>Role of HOP in HSF1-mediated stress response in mammalian cells.</i>
14:30 - 14:45	Rose Kadye (RU) <i>Mitochondrial adaptations to adipogenesis.</i>	Karl Storbeck (SUN) <i>Compounding evidence for the role of overlooked 11-oxygenated androgens in castration resistant prostate cancer.</i>	Sylvia Omage (Nigeria) <i>Contractile force is crucial for microchaete patterning on Drosophila melanogaster notum.</i>
14:45 - 15:00	Karin Terburgh (NWU) <i>Ndufs4-/- skeletal muscle reveals fiber type-specific bioenergetic and metabolic disturbances.</i>	Ndivhuwo Nemukondeni (UV) <i>Characterization of human KIAA0513 protein that is upregulated in invasive glioblastoma multiforme.</i>	Chrisna Gouws (NWU) <i>Three-dimensional cell culture models: physiologically relevant in vitro research.</i>

15:00 - 16:00 Tea/Coffee Break & Poster Viewing 2 (All even poster numbers, i.e. 2, 4, 6 etc. presenters present) E5

16:00 - 17:30 **PARALLEL SESSION 6** Venue: E5 (basement floor)

	Lecture Room 1	Lecture Room 2	Lecture Room 3
	<i>Bioenergetics, Biotransformation and Ageing</i>	<i>Biotechnology</i>	<i>Cell Biology</i>
	Chair: Lardus Erasmus	Chair: Ndiko Ludidi	Chair: Abidemi Paul Kappo
16:00 - 16:30	Adrian Tordiffe (UP) <i>The central role of glycine in cheetah metabolism and health.</i>	Abidemi Ojo (UFS) <i>Biodegradation of chloroethenes (CEs) of a South African CEs-contaminated water using bioreactors.</i>	Adrienne Edkins (RU) <i>Molecular chaperone complexes regulate important cellular processes and represent putative drug targets in cancer.</i>
16:30 - 16:45	Francis Obiora Okonkwo (Nigeria) <i>Heavy metals mediated oxidative stress in artisanal tin miners in Barkin-Ladi Area of Plateau State, Nigeria.</i>	Henriëtte van der Zwan (NWU) <i>The application of biotechnology on genus Agapornis (lovebirds).</i>	Stephanie Ncube (UCT) <i>Targeting the oncogenic TBX3 and its co-factors in anti-cancer drug development.</i>
16:45 - 17:00	Oluwatosin Arojoye (Nigeria) <i>Evaluation of genotoxic and oxidative stress potential of Ajakanga landfill leachate in rats.</i>	Saheed Sabiu (UFS) <i>Sterols in milk samples of ruminant and non-ruminant animals.</i>	Liang Gu (Wits) <i>Cholesteryl ester transfer protein as a possible molecular target for reducing drug-resistance in breast cancer.</i>
17:00 - 17:15	Eloise Ferreira (Wits) <i>LRP/LR specific antibody IgG1-IS18 enhances mTERT levels and impedes neurodegeneration in Alzheimer's disease transgenic mice.</i>	Ali Ali (UWC) <i>Comparative analysis of the molecular responses to drought in maize and sorghum.</i>	Shantal Maharaj (RU) <i>The role of the HOP co-chaperone in the formation of HSP90 complexes: chaperone regulation of glycolysis.</i>
17:15 - 17:30	Tyrone Otgaar (Wits) <i>37 kDa LRP::FLAG enhances telomerase activity and reduces ageing markers in vitro and in vivo.</i>	Olusegun Richard Adeoyo (Nigeria) <i>Amyloglucosidase for the bio-economy from an ericoid associated fungus.</i>	Bianca Silva (Wits) <i>Construction of heat shock factor double-stranded RNA for prospective understanding of Anopheles funestus male genitalia rotation.</i>

18:30 **Gala Dinner** Feather Hill Venue

WEDNESDAY, 11 JULY

08:30 - 10:15 **PLENARY SESSION 4** Venue: Sanlam Auditorium

	Chair: Iqbal Parker	
08:30 - 09:15	<i>Genetic and environmental factors of human aging and longevity.</i>	Efstathios Gonos (Greece)
09:15 - 09:45	<i>Contraception, Progestins and HIV-1.</i>	Janet Hapgood (UCT)
09:45 - 10:15	<i>Overview of dsRNA virus research in South Africa.</i>	Albie van Dijk (NWU)
10:15 - 11:00	Tea/coffee Break	E5

11:00 - 12:45 **PARALLEL SESSION 7** Venue: E5 (basement floor)

	Lecture Room 1	Lecture Room 2	Lecture Room 3
	<i>Inherited Metabolic and Neurodegenerative Disease.</i>	<i>Biotechnology</i>	<i>Cell Biology</i>
	Chair: Francois van der Westhuizen	Chair: Lizelle Piater	Chair: Gerda Venter
11:00 - 11:30	Olorunfemi Raphael Suleiman (Nigeria) <i>Neurobiochemical roles of vitamin C and water melon juice extract on electrolytes, antioxidant enzymes and oxidative stress biomarkers in the treatment of ischemic stroke in Wistar rats.</i>	Eden Rebecca Padayachee (UCT) <i>SNAP-Tag technology mediates site specific conjugation of mesothelin antibody fragments with a fluorophore to improve target specific cancer therapy.</i>	Mohsin Khan (UCT) <i>TBX3 directly represses the pro-cell death factor, CERS1, in malignant melanoma.</i>
11:30 - 12:00	Maril Dercksen (NWU) <i>Galactose-1-phosphate uridylyltransferase (GALT) deficiency: Redefined as a secondary congenital disorder of glycosylation and the importance of galactitol measurement.</i>	Marno Huyzers (NWU) <i>Local implementation of a plasmid only rotavirus reverse genetics system.</i>	Lungile Mapekula (UCT) <i>The cooperation of EBV and HIV in the pathogenesis of HIV-associated Burkitt's lymphoma.</i>
12:00 - 12:15	Maryke Schoonen (NWU) <i>Mitochondrial disease in South Africa: clinical, biochemical and genetic outcomes in paediatric patients.</i>	Stanley Makumire (UV) <i>Investigation of the effect of the GGMP repeat motif of Plasmodium falciparum Hsp70 on its chaperone function and its interaction with a co-chaperone, PfHsp.</i>	Ntethelelo Sibisi (UKZN) <i>Evaluating the role of nitric oxide on myoblast proliferation, migration and differentiation.</i>
12:15 - 12:30	Tosin Olasehinde (FH) <i>Ecklonia maxima and Gelidium pristeroides exhibit antioxidant activity and inhibit beta-amyloid aggregation, cholinesterases and beta-secretase activities: Potential implication for neuroprotection against Alzheimer's disease.</i>	Ayodeji Falade (FH) <i>Biochemical and molecular characterization of a unique DyP-type peroxidase from Raoultella ornithinolytica OKOH-1.</i>	Leslie Peters (NWU) <i>Characterizing cell-free DNA – An in vitro study on human cells.</i>
12:30 - 12:45	Janeé Coetzer (NWU) <i>Metabolomics investigation of Ndufs4 knockout mouse brain regions: a step closer to understanding the regional neurodegeneration in mitochondrial complex I deficiencies.</i>	Vukosi Edwin Munyai (UWC) <i>Recombinant expression of cytochrome P450-2D6 and its application in tamoxifen metabolism.</i>	Meesbah Jiwaji (RU) <i>Enhancing the detection of a persistent RNA virus infection in mammalian cells.</i>

12:45 - 13:00 **Conference closing and poster prizes** E5 Lecture Room 1

13:00 **Lunch to go** E5

CPUT, Cape Peninsula University of Technology; FH, University of Fort Hare; NWU, North-West University; RU, Rhodes University; SMHSU, Sefako Makgatho Health Sciences University; SUN, Stellenbosch University; UCT, University of Cape Town; UFS, University of the Free State; UJ, University of Johannesburg; UKZN, University of KwaZulu Natal; UL, University of Limpopo; UNISA, University of South Africa; UP, University of Pretoria; UV, University of Venda; UWC, University of Western Cape; UZ, University of Zululand; Wits, University of the Witwatersrand.