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14TH ANNUAL BIOMEDICAL RESEARCH & INNOVATION PLATFORM CONFERENCE

16 & 17 October 2024

SCIENTIFIC PROGRAMME

Time: 16th October 8:00 – 16:10
17th October 8:45 – 16:30

Venue: SAMRC Conference Centre
Auditorium & Virtual | MS
Teams

For enquiries email: BRIP.symposium@mrc.ac.za

Day 1
Wednesday, 16 October 2024

8h00 – 8h30

Registration

8h30 – 9h00

Welcome and Opening Address by SAMRC President,
Prof Ntobeko Ntusi



Session 1

Session Chairs:

Prof Rabia Johnson & Dr Nonhlakanipho Sangweni

9h00 – 9h30

Keynote speaker:

Professor Olov Rolandsson, Department of Public Health and Clinical Medicine, Umeå University, Sweden, *"Autoimmunity and different sub-groups of diabetes in Africa: lessons from Ghana"*



9h30 – 9h42

To determine the suitability of the ex vivo rat retinal model to define the early pathogenic mechanisms underlying diabetic retinopathy

9h42 – 9h54

Glucocorticoids improved inflammation but did not improve inflammation-induced cardiac dysfunction in collagen-induced arthritis rats

9h54 – 10h06

The transcription factor p53 regulates adipose tissue macrophages' phenotype and their capacity to handle lipids

10h06 – 10h18

Anti-metainflammatory effects of *Momordica balsamina* leaf water extract on 3T3-L1 adipocytes and RAW 264.7 macrophages

10h18 – 10h50

Tea/coffee

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Petra Makua (MSc)
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Madikadike Moshape (MSc)
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Inès Mucel (PhD)
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Tshedimosho Kgoadi (MSc)
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Session 2

Session Chairs:

Dr Rianita van Onselen & Dr Kholofelo Malemela

10h50 – 11h20

Keynote speaker:

Professor Landon Myer, Department of Public Health, University of Cape Town, *"Intersection of communicable and non-communicable diseases"*



11h20 – 11h32

Investigating molecular interactions of hyperglycaemia and SARS-CoV-2 spike protein variants in a model of pancreatic beta cells

11h32 – 11h44

Investigating mitochondrial function in HIV-associated cardiometabolic disease: preliminary findings from a South African population

11h44 – 11h56

Cytotoxicity, and computational approach to unveil the potential benefits of flavonoids in COVID-19 disease and diabetes by targeting AMPK

11h56 – 12h08

Genomic variants and associated drug resistance profiles revealed by whole genome sequencing in drug resistant M. tuberculosis clinical isolates from Limpopo province

12h08 – 12h20

Assessing the toxicity of 2-imino-7-nitro-4-(4-chlorophenyl)-²H-1,3- thiazino[3,2-A] benzimidazole (FDM31)-capped gold nanoparticles in zebrafish for potential use in treating microbial infections

12h20 – 12h40

Pre-lunch walk around campus

12h40 – 13h40

Lunch

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Tara Michaels (PhD)
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Kheya Mokoena (MSc)
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Fave Yohanna Tata (PhD)
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Kabelo Kaapu (PhD)
.....

.....
Molatelo Rapholo (MSc)
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Session 3

Session Chairs:

Prof Carmen Pheiffer & Dr Stephanie Dias

13h40 – 13h52

Umbilical cord blood metabolomic profiling to reveal potential biomarkers of adverse pregnancy and perinatal outcomes in the Vhembe district: a cross-sectional study

13h52 – 14h04

Exploring the potential of DNA methylation as biomarkers for gestational diabetes mellitus

14h04 – 14h16

Predictors of quality of life among patients with end-stage renal disease in Kano Metropolis, Nigeria

14h16 – 14h28

Therapeutic strategies for pancreatic cancer: targeting the oncogenic transcription factor TBX2 with chromomycin A5

14h28 – 14h40

TBX2 as a therapeutic target for the treatment of HPV-negative cervical cancer

14h40 – 16h10

Interactive Poster Session 1

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Innocent Moagi (MSc)
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Matladi Masete (PhD)
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Hussaini Aikawa (PhD)
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Jinming Bai (MSc)
.....

.....
Anjani Rama (MSc)
.....

Day 2

Thursday, 17 October 2024

Session 4

Session Chairs:

Dr Hygon Mutavhatsindi & Dr Nasiema Allie

8h45 – 9h15

Keynote speaker:

Prof Alvaro Viljoen, Department of Pharmaceutical Sciences, Tshwane University of Technology, "Current status and future of phytomedicine and ethnopharmacology in South Africa"



9h15 – 9h27

Evaluation of *Lessertia frutescens* and *Echinacea purpurea* hepatotoxic effects using HepG2/C3A spheroids and Wistar rats

9h27 – 9h39

Investigating the effects of *Dicerovaryum senecioides* and *Flaveria trinervia* chloroform and methanol extracts on triple negative metastatic breast cancer cells

9h39 – 9h51

The *Momordica balsamina* methanol extract mitigates interleukin-6-induced metastatic effects of MDA-MB-231 breast cancer cells through the inhibition of the IL-6/JAK2/STAT3 pathway

9h51 – 10h03

Targeting KEAP1-Nrf2-ARE signalling pathway with *Momordica balsamina* aqueous extract to mitigate cisplatin-mediated renal damage.

10h03 – 10h15

Mitigating hyperglycemic oxidative stress in HepG2 cells: the role of *Carica papaya* leaf and root extracts in promoting glucose uptake and antioxidant defense

10h15 – 10h27

In vitro and in silico antihyperglycemic potential of *Cyclopia genistoides* crude extracts

10h30 – 11h00

Tea/coffee

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Sthembile Sithole (PhD)
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Tubake Sebei (MSc)
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Tshwarelo Mohale (PhD)
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Mante Dolly Kgakishe (PhD)
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Mthokozisi Nxumalo (PhD)
.....

.....
Nompilo Cele (MSc)
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Session 5

Session Chairs:

Prof Julia Goedecke & Dr Sylvia Riedel

11h00 – 11h30

Keynote speaker:

Prof Lara Dugas, Loyola University Chicago, USA/University of Cape Town, *"Associations between gut microbiota and cardiometabolic risk in African origin populations: The METS Microbiome study"*



11h30 – 11h42

The effect of maternal methyl donor nutrient supplementation on the intestinal barrier in offspring in a model of metabolic disease in rats

11h42 – 11h54

Comparing gut permeability and endothelial function in hypertensive and normotensive pregnant women from Mthatha

11h54 – 12h06

Postprandial glucose variability and clusters of sex hormones, liver enzymes, and cardiometabolic factors in a South African cohort of African ancestry

12h06 – 12h18

Characteristics of hypertensive heart failure with a preserved ejection fraction patients in a Black community sample in South Africa

12h18 – 12:30

Adding insult to injury: a sex-specific investigation of chronic stress on heart function after regional ischemia

12h30 – 13h25

Lunch

13h25 – 14h55

Interactive Poster Session 2

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Mpho Mokoape (MSc)

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Ebenezer Ackah (MSc)

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Bontle Masango (PhD)

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Atlegang Tlhale (PhD)

.....
Megan Cairns (PhD)

Session 6

Session Chairs:

Dr Jyoti Sharma & Dr Sello Mikasi

14h55 – 15h20

Keynote speaker:

Dr Mathilda Mostert, Owner and MD, Precision Oil Laboratories, Tzaneen, *"From research to industry"*



15h20 – 15h45

Keynote speaker:

Prof Monique Zaal, Gene diagnostics, Cape Town, SA, *"The role of pharmacogenetics for a tailored personalized treatment response"*



15h45 – 16h30

Prize Giving,

Prizes presented by Professor Johan Louw, Senior Director of the Platforms

POSTER PRESENTERS

Poster No.	Name	Title	Degree	Institution
1	Gugulethu Dhlamini	A two-year wastewater-based surveillance of SARS-CoV-2 trends within the Tshwane region, South Africa	MSc	Sefako Makgatho Health Science University
2	Kagiso Makwaana	Evaluation of cytotoxicity of <i>Euryops floribundus</i> acetone leaf extract in cervical cancer cells	MSc	University of Limpopo
3	Sesethu Ketse	Hypermethylation of the T-Box transcription factor 3 (TBX3) promoter in breast cancer: a pilot study in African women	MSc	South African Medical Research Council
4	Casandra Mbazima	Evaluation of the effect of <i>Senecio serratuloides</i> and <i>Strychnos madagascariensis</i> extracts on the absorption and hepatic metabolism of metformin, rosiglitazone, glyburide, atorvastatin.	MSc	University of Zululand
5	Maureen Ramadimetsa Nkwana	The effects of curcumin derivatives on SARS-CoV-2 spike S1 protein induced oxidative stress on macrophage cells	MSc	University of Limpopo
6	Ramolobane Mahlatse Mogodi	In silico evaluation of 2-(chloropropyl-1-ynyl)-quinoxaline (LA59E4) derivative as a potential inhibitor of SARS-CoV-2 viral entry, assembly and replication	MSc	University of Limpopo
7	Stephen Southway	Evaluating the biphasic effect of metformin on a 3D cardiomyocyte spheroid model rendered insulin resistance	MSc	Stellenbosch University
8	Koketso Maenetja	Investigating the expression patterns of the novel TSPO splice variant, PBR-s, in cervical cancer cells	MSc	University of Limpopo
9	Siphelele Thandekile Thethwayo	The effect of <i>Bauhinia bowkeri</i> extracts on anti-hypercholesteremia: insights from in vitro and in silico investigations	MSc	University of Zululand
10	Zuqaqambe Mhlali Mampofu	The relationship between blood pressure and blood glucose level in Walter Sisulu University community	MSc	Walter Sisulu University
11	Hellen Laura Mnisi	Assessing the impact of <i>Commelina benghalensis</i> extracts on breast cancer cell	MSc	University of Limpopo
12	Chuma Mabuto	Assessing cardiovascular effects of HIV/AIDS and preeclampsia in pregnant women of African Ancestry in Mthatha, South Africa	MSc	Walter Sisulu University
13	Nicky Louis Byrne	Sensitive amplification methods to detect and sequence human parechoviruses, enteroviruses and adenoviruses in cerebrospinal fluid	MSc	Stellenbosch University
14	ZB Mathenjwa	Phytochemical screening, in vitro antibacterial and in silico antidiabetic potential of <i>Agathosma betulina</i> extracts	MSc	University of Zululand
15	Kaone Sephiphi	Antipyretic effects of <i>Schinus molle</i> in yeast-induced pyrexia Wistar rats.	MSc	Sefako Makgatho Health Science University

Poster No.	Name	Title	Degree	Institution
16	Aphang Polette	Investigating the cytotoxic effects of <i>Ozoroa paniculosa</i> in diet-induced obese C57BL/6 mice	PhD	University of Limpopo
17	Thato Kgatla	The effects of <i>Aspalathus linearis</i> (rooibos) against angiotensin II-induced hypertrophy and apoptosis	PhD	Stellenbosch University
18	Cayleigh de Sousa	Targeting CD44 to overcome chemoresistance and metastasis in cervical cancer: insights from ex vivo and in vitro models	PhD	Stellenbosch University
19	Madre Meyer	Utilising personalised medicine to investigate the effects of senescence-induced treatment resistance in cervical cancer patients	PhD	Stellenbosch University
20	Elizka van Heerden	Novel combination therapy: <i>Allium sativum</i> L. with the chemotherapeutic drug, 5-Fluorouracil for colon cancer	PhD	Stellenbosch University
21	Vusi Mbazima	Exploring the anticancer potential of <i>Momordica balsamina</i> methanol extract on HT-29 colon cancer cells	Established Researcher	University of Limpopo
22	Zainonesa Abrahams	Development of a bioinformatics pipeline for analyzing gene expression patterns in hypertensive patients	Postdoc	South African Medical Research Council
23	Abegail Mukhetwa Tshivhase	The effect of resveratrol on hyperglycemia-related microRNAs in HepG2 cells	Postdoc	South African Medical Research Council

