

# INVITATION ATTENDEES

## PRECISION MEDICINE

The University of the Western Cape, Ghent University  
and the University of Missouri invite you to attend  
a joint symposium on  
**Precision Medicine: Therapeutic Targets**

### Promoting focused Trans-institutional Collaborative Research

Precision medicine has been defined as “an emerging practice of medicine that uses an individual’s genetic profile to guide decisions made about the prevention, diagnosis and treatment of disease. Knowledge of a patient’s genetic profile can help doctors select the proper medication or therapy and administer it using the proper dose or regimen”. In other words, each person’s unique clinical, genetic, genomic, and environmental information influences the nature of diseases, their onset, their course, and their response to medications in very individualized ways.

Translating findings from genomics, pharmacogenomics and related -omics fields into clinical applications capable of reducing the burden of chronic diseases remains an enormous challenge. To address this, precision health research must ensure the fit of genomic medicine with the key approach of whole-person care through personalization; targeting areas that will see early benefits such as pharmacogenomics and novel therapeutic targets; ensuring that appropriate clinical decision support is available; supplementing genomic information with patient information including EMRs, and looking to the future for areas of development such as the intersection of population health and genomics.

This symposium has been designed to bring together researchers from UWC, Ghent and the University of Missouri to share their current work, brainstorm on needed resources including innovative data sharing and co-create opportunities for collaboration and competitive funding applications. Ultimately we hope to provide precision medicine interventions that are more cost-effective than population-based measures and will improve health care in Africa, Europe and the United States.

**27-30 March 2023**

**UWC Campus**

**In-person Symposium**

[CLICK HERE  
TO RSVP](#)

**RSVP by no later than Friday, 17 March 2023**



UNIVERSITY of the  
WESTERN CAPE



AFRICA PLATFORM  
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COLUMBIA | KANSAS CITY | ROLLA | ST. LOUIS

## PROGRAMME

### Monday, March 27

**8:00 - 8:55** Arrival tea/coffee/bakery

**9:00 - 13:00** **UGent Presentations - each 30 minutes with 15 minutes for questions**

- Camelid single domain antibodies (Nanobodies): principles and applications in (bio)medical research by Prof. Jan Gettemans
- Toward targeted therapies for medication-resistant epilepsy by Prof. Robrecht Raedt
- Integrative gene regulatory network biology for precision medicine: elucidation of molecular mechanisms and pinpointing key regulators in complex diseases by Prof. Vanessa Vermeirssen
- Pharmacogenetics in Belgium: from high expectations towards more clinical applications by Prof. Lies Lahousse (virtual)
- Biomarker identification and profiling in heterogeneous prostate tumors by Prof. Kathleen Marchal (virtual)

**13:00 - 14:45** Lunch for symposium attendees

**15:00 - 15:30** Welcoming Remarks

- Rector Tyrone Pretorius
- President Mun Choi
- Vice-rector Mieke Van Herreweghe

**15:30 - 16:30** Presentation by group #1

- Hypoxia enhances the secretion of Cancer Paracrine factors and Exosomes and is crucial to the progression of metastasis across the Blood-Brain Barrier by Prof. David Fisher (UWC)
- Sleep Apnea End-Organ Morbidity: Exosomes as Diagnostic and Prognostic Phenotypic Markers by Prof. David Gozal (MU) & Prof. Abdelnaby Khalyfa (MU)

**16:30- 18:00** Presentation by group #2

- Presentation 1: Development of Neuroprotective Agents and the Implementation of an African Specific Disease-Gene Variant Data Analytic Platform with a Focus on Alzheimer’s Disease by Prof. Jacques Joubert (UWC) and Prof. Xiaoqin Zou (MU) (virtual)
- Presentation 2: Alzheimer’s disease mitigation: AI, neuroimaging and gut-brain axis by Prof Ai-Ling Lin (MU) (virtual) and Prof. Jacques Joubert (UWC)

### Tuesday, March 28

**10:00 - 13:00** Small group meetings

**13:00 - 14:45** Lunch for symposium attendees

**15:00 - 16:00** Presentation by group #3

- Developing a multimodal, integrative, in-silico, multiomics data science approach to early detection of HPV-based biomarkers of oropharyngeal head and neck cancer by Prof. Henry Adeola (UCT), Prof. James Bashkin (UM St. Louis), Prof. Haly Holmes (UWC), Prof. Amir Afrogeh (UWC), Prof. Badri Adhikari (UM St. Louis) and Dr Hocine Bendou (UWC).

**16:00 - 17:00** Presentation by group #4

- Precision nanomedicine for tuberculosis therapy by Prof. Admire Dube (UWC) and Prof. Raghuraman Kannan (MU) (virtual)

**17:00 - 18:00** Presentation by group #5

- Patient Data standardization and collection for UWC; benefits of collaborations and partnerships by Prof. Gerald J Wyckoff and Prof. Jennifer-Anne Chipps (UWC) (virtual)

### Wednesday, March 29

**8:00 - 8:55** Arrival tea/coffee/ bakery

**9:00- 13:00** Group Presentations - each 25 minutes with 10 minutes for questions.

- Utilization of the African Genome Project for Africa-focused Precision Medicine and Precision Drug Discovery: A Case Study of Statins by Prof. Samuel Egieyeh (UWC)
- Precision medicine: Pharmacogenomics and Development of Individualised Drug Therapy for Diabetes and Hypertension Patients by Prof. Mongi Benjeddou (UWC)
- Application of metabolomics and DNA adductomics to further unravel the impact of the exposome in health and disease by Dr. Lieselot Hemeryck (UGent)
- FLEXiGUT: Investigating the life-course impact of dietary and environmental exposure on chronic low-grade gut inflammation by Dr. Roger Peró-Gascón, Prof. Dr. Marthe De Boevre, Prof. Dr. Sarah De Saeger, and the FLEXiGUT consortium (virtual)
- The prognostic role of M2-type tumor associated macrophages in oropharyngeal squamous cell Carcinoma by Dr. Tijl Vermassen (UGent) and Mr. Mathieu Struys (UGent)
- The role of human papilloma virus and tumor-infiltrating lymphocytes in oral and oropharyngeal cancer microenvironment: a tricontinental study by Dr. Tijl Vermassen (UGent) and Mr. Mathieu Struys (UGent)
- Creating Precision Medicine Education for Future Pharmacists: Challenges and Opportunities for the UM/UWC Partnership by Ms. Nicole Keuler (UWC) and Prof. Jerry Wyckoff (UMKC)
- Smart Sensing and Analytics for Cognitive Health Care by Prof. Sajal Das (Missouri Science & Technology)

**13:00 - 14:45** Lunch for small groups

**15:00 - 18:00** Small group meetings

### Thursday, March 30

Open day for group meetings or social activities.

All morning sessions will be recorded for circulation at UM, UGent & UWC. The afternoon sessions on Monday and Tuesday will be webinar style to provide the opportunity for UM and Ghent researchers to participate virtually.