

Session Program

6–10 Jul 2026



SAIP2026

Physics for Development, Education and Outreach

University of the Western Cape

Tuesday 7 July

09:30

Physics for Development, Education and Outreach

Session | Location: University of the Western Cape, Lecture Hall C9 | Convener: Bako Nyikun AUDU

09:30–09:50

Grade 10 Learners' Conceptual Understanding of Electric Circuit Concepts using Physics Education Technology (PhET) Simulations

Speaker

Dr Phala Wesley Masoga

09:50–10:10

Understanding DC Circuits: Student Misconceptions and Implications for Teaching in South Africa

Speaker

Moreen Coetzee

10:10–10:30

Learning from Kahoot

Speaker

Derek Fish

10:30

11:00

Physics for Development, Education and Outreach

Session | Location: University of the Western Cape, Lecture Hall C9 | Convener: Dr Happy Phage

11:00–11:20

Enhancing STEM Engagement and Throughput in Under-Resourced Context: A Constructivist-Inquiry Tutorial Intervention in the Cape Flats, South Africa

Speaker

Bako Nyikun AUDU

11:20–11:40

Barriers to Teachers' Engagement in Laboratory Experiments for Physical Sciences in Vhembe District, Limpopo, South Africa

Speaker

Lufuno Takalani

11:40–12:00

Astronomy for Mental Health

Speaker

Joyful Elma Mdhuli

12:00–12:20

Over - Reliance on Simplified Physics Model: Students Explanation in Optics

Speaker

Ishiyaku Mbela Abubakar

12:20–12:40

The importance of laboratory assistance in the success of the undergraduate physics and chemistry modules

Speaker

Buyisiwe Sondezi

12:40

14:40

Physics for Development, Education and Outreach

Session | Location: University of the Western Cape, Lecture Hall C9 | Convener: Mark Herbert

14:40–15:00

BLUEshift Africa: Accelerating Towards the Future of Undergraduate Astronomy and Physics Education in Africa

Speakers

Linda Strubbe, Tabitha Alango

15:00–15:20

Probing how students explain multi-causal astronomical phenomena: a seasons case study

Speaker

Chad Leukes

15:20–15:40

The Language of Experimental Measurement in Physics.

Speaker

Nuraan Majiet

15:40–16:00

Using Smartphone Magnetometers in the (Remote) Undergraduate Physics Teaching Laboratory, a Design-Based Research Approach

Speaker

Mayhew Steyn

16:00

Wednesday 8 July

09:30

Physics for Development, Education and Outreach: Masoga

Session | Location: University of the Western Cape, Lecture Hall C9 | Convener: Phala Wesley Masoga

09:30–09:50

Diagnostic Assessment of Conceptual Understanding in Direct Current Circuits Among Pre-Service and In-Service Teachers

Speaker

Mphiriseni Khwanda

09:50–10:10

The influence of national science and innovation policy on science centre mandates; emerging pedagogical approaches to integrate indigenous knowledge systems and digital technologies.

Speaker

Dr FHULUFHELO NEMANGWELE

10:10–10:30

Academic Progression from Extended Curriculum to Mainstream Physics: Evidence from First-Year University Physics Modules

Speakers

Dr Lutendo Phuthu, Ms Marandela Mulalo, Mr clarence mabaso

10:30

11:00

Physics for Development, Education and Outreach

Session | Location: University of the Western Cape, Lecture Hall C9 | Convener: Derek Fish

11:00–11:20

Problem-Based Learning approach for developing problem solving skills in electric circuits for Grade 12 learners.

Speaker

Dr Phala Wesley Masoga

11:20–11:40

Transforming Physics Learning through Structured Consultation Support in PHY111

Speaker

Dr Bako Nyikun Audu

11:40–12:00

Special Relativity Battleship: Supporting Undergraduate Relativity Learning Through Game-Based Deployment and Educator Analytics

Speaker

Prof. Lynndle Square

12:00–12:20

Whats in the Box? a tactile remote sensing approach to teaching wave physics and spatial reconstruction.

Speaker

Ms Seaelo Nonky Ramohoeba

12:20–12:40

A Structural Equation Modelling Analysis of the National Senior Certificate Pedagogical Gap and University Readiness in South Africa (2021–2025)**Speaker**

Ms Magdeline Seabi

12:40

14:50

Physics for Development, Education and Outreach**Session** | **Location:** University of the Western Cape, Lecture Hall C9 | **Convener:** Buyi Sondezi

14:50–15:10

Developing Tutors while Supporting Students: Evaluating a Structured Consultation Programme in First-Year Physics**Speaker**

Dr Bako Nyikun Audu

15:10–15:30

Comparative Photoelectric Effect Experiment Using LEDs and Mercury Lamp Sources**Speaker**

Dr Hendrik Jacobus van Heerden

15:30–15:50

INVESTIGATING TEACHERS' PERCEPTIONS OF THE DECLINE IN GRADE 9 LEARNERS' UPTAKE OF PHYSICAL SCIENCES IN THE FET PHASE**Speaker**

Vuyolwethu Mavityo

15:50–16:10

Beyond Stargazing: Astrotourism as a Science-Based Tool for Development**Speaker**

Joyful Elma Mdhuli

16:10

Thursday 9 July

11:00

Physics for Development, Education and Outreach

Session | Location: University of the Western Cape, Lecture Hall C9 | Convener: Chad Leukes

11:00–11:20

A Pedagogical framework for teaching Econophysics through contrasting Self-Organized Criticality in the Bak-Chen-Scheinkman-Woodford Model with Real Business Cycle Theory Through Rationality Debates

Speaker

Mr Lehlohonolo Moloi

11:20–11:40

Developing Data Science Skills Through Collaborative Hackathons: A Case Study of Hack4dev's Data Science Hackathon Programme

Speaker

Charles Takalana

11:40–12:00

The Practure – Physical events with live data in the Lecture Hall

Speaker

Peter Horszowski

12:40

14:40

Physics for Development, Education and Outreach

Session | Location: University of the Western Cape, Lecture Hall C9 | Convener: Mayhew Steyn

14:40–15:00

Evaluating the Impact of a Physical Science Teacher Development Programme in the Vhembe District, South Africa

Speaker

Tshifhiwa Ranwaha

15:00–15:20

UNDERSTANDING HIGH SCHOOL PHYSICAL SCIENCE IN THEIR PROFESSIONAL DEVELOPMENT TRAINING

Speaker

Dr Happy Phage

15:20–15:40

Pre-service physics students' perception on their experiments in the laboratory

Speaker

Mr Odirile Mashalane

15:40–16:00

A Pretest–Post-Test Analysis of PHET Simulations Enhanced with ChatGPT in Teaching Electricity Concepts

Speaker

Martin Tarisai Kudinha

16:00

16:30

Physics for Development, Education and Outreach**Session** | **Location:** University of the Western Cape, Lecture Hall C9 | **Convener:** Mphiriseni Khwanda

16:30–16:50

Investigating Physical Sciences Teachers' Perceptions and Problem-Solving Approaches in Vertical Projectile Motion**Speaker**

Mark Herbert

16:50–17:10

To Evaluate the Alignment of Grade 10 Lesson Plans in Electricity and Magnetism written during COVID-19 with the South African CAPS curriculum Goals.**Speaker**

Ronald Engelbrecht

17:10–17:30

Investigating in-serves Teachers' Perceptions and Learning Gains through Modeling Instruction in DC Electric Circuits**Speaker**

Dr Mark Herbert

17:30