

## NITheCS COLLOQUIUM

# Panel discussion: 'Building a Sustainable Future: The Power of Basic Sciences'

Monday, 19 June 2023 | 15h45 for 16h00 – 17h00 SAST

**Venue:** in person\* and online

\* *Neelsie Cinema, Stellenbosch University*

--- Cheese and wine will be served at the venue ---

*This event aligns with a topic of the International Year of Basic Science for Sustainable Development*

## PANELISTS



**Mesias Alpheus**  
(Stellenbosch  
University)



**MJ (Thinus) Booysen**  
(Stellenbosch  
University)



**David Holgate**  
(University of the  
Western Cape)



**Guy Midgley**  
(Stellenbosch  
University)



**Hugh Patterson**  
(Stellenbosch  
University)



**Ethel Phiri**  
(Stellenbosch  
University)

## ABSTRACT

As the IYBSSD (International Year of Basic Sciences for Sustainable Development) comes to an end, this panel discussion brings together distinguished experts to explore how basic sciences can contribute to a sustainable future.

In an era marked by environmental and socio-economic challenges, our panel will discuss the crucial role of foundational sciences in shaping innovative and sustainable solutions.

This insightful exploration will seek to uncover the potential of basic sciences in leading us towards sustainability.

## REGISTER TO ATTEND

Visit <http://bit.ly/3Pwon99>  
or scan/click:



## BIOGRAPHIES

### Mesias Alfeus

Dr Mesias Alfeus is a Senior Lecturer in the department of Statistics and Actuarial Science at Stellenbosch University, and he is a NITheCS Quantitative Finance Research Programme Manager. He has a PhD in Quantitative Finance from the University of Technology Sydney (UTS) in Australia. He is a Mathematician by training with a BSc in Mathematics and Physics from the University of Namibia. He holds masters and honours degrees in Financial Mathematics, both with Cum Laude from Stellenbosch University. He holds many academic awards and won the 2018 International Young Investigator Training Program (YITP) prize at the XIX Workshop on Quantitative Finance held at the University of Rome Tre in Italy. He held an academic visiting position at the University of Padova, Italy. He previously worked as a Risk Analyst at Namibian Financial Institutions Supervisory Authority (NAMFISA), and as a Research Associate at UTS Finance and Lecturer of Financial Mathematics at the University of Wollongong Australia. He was also an AIFMRM Postdoctoral Research Fellow at the University of Cape Town. His papers have been published in leading journals. His current research interests focus on Computational and Mathematical Finance, more specifically in numerical methods for pricing of options and model calibration including model empirical analysis.

### MJ (Thinus) Booysen

Prof MJ (Thinus) Booysen is Professor and Chair in the Internet of Things at the Faculty of Engineering at Stellenbosch University. He has been with Stellenbosch University since 2009 and his research is on the Internet of Things, with a focus on Smart Energy, Water and Vehicles (specifically its application to paratransit in Sub-Saharan Africa). He is also a founder of Bridg-iot (Bridge-to-the-Internet-of-Things), founder of Green X Engineering, and co-creator of Geasy and Count Dropula. He is the Director of the MTN Mobile Intelligence Lab and partner in the Stellenbosch Smart Mobility Lab. He is a Senior Member of the IEEE, Member of the Institution of Engineering Technology (MIET), a Chartered Engineer (CEng) at the Engineering Council (UK), and a Professional Engineer (PrEng) with the Engineering Council (SA). He has over 10 years' international industry experience in the aerospace and automotive industries with companies that include SunSpace, Rolls-Royce, Boeing, BMW and Jaguar Land Rover.

### David Holgate

Prof David Holgate is a senior professor of Mathematics at the University of the Western Cape (UWC). He recently assumed a Research Chair in Mathematics and Applied Mathematics at UWC after serving as Head of Department and as Deputy Dean in the Faculty of Natural Sciences. Besides his research interest in General Topology and Category Theory, for which he holds a B-rating, David maintains a broad involvement in national mathematics activities. He is chairperson of the council of AIMS and a founding member of NGA-MaSS. He also serves on the council of SAMS and the board of SAMF. David has held positions at the University of Cape Town, where he completed his PhD in 1995, and the University of Stellenbosch, where he headed the Mathematics Division of their Department of Mathematical Sciences. He has been a research guest at over 20 universities across the globe and held visiting positions at the University of Bremen (Germany) and the Brno University of Technology (Czech Republic).

### Guy Midgley

Guy Midgley has worked in the fields of global change and biodiversity science since the 1980s in the South African National Biodiversity Institute, then taking up a Professorship at Stellenbosch University (Botany and Zoology) in 2014. He has held lead roles in international scientific assessments (IPCC 4th, 5th and 6th Assessments, CBD ad hoc Technical Expert Group, and IPBES Global Assessments) and national level syntheses on climate change impacts, risks, and adaptation. With over 170 publications, he holds an NRF A-rating, has been a Thomson Reuters highly cited researcher (2014), and is amongst the most influential climate change scientists globally (2021). He is a recent awardee of the SA Royal Society Marloth Medal and Humboldt Foundation Research Award for lifetime science contributions.

### Hugh Patterton

Prof Hugh Patterton is the Director of the Centre for Bioinformatics and Computational Biology (CBCB) at Stellenbosch University. He received his PhD in Biochemistry from the University of Cape Town in 1991. In 1992 he was awarded a Fogarty Visiting Fellowship and spent the next 4 years at the National Institutes of Health in Bethesda, USA. In 1996 he moved to Pennsylvania State University as a Research Associate. In this time, he completed writing DNAtools, the Stider equivalent for Windows in C++. In 1998 he returned to South Africa and was awarded a Wellcome Trust International Senior Research Fellowship in Biomedical Science. Prof Patterton was part of group that set up the National Bioinformatics Network to establish Bioinformatics in South Africa. He then launched the Bioinformatics node at UCT, the Facility for Genomics and Proteomics at UFS, and the CBCB at SU. He has also set up an undergraduate programme and BScHons, MSc and PhD degrees in Bioinformatics and Computational Biology at SU.

### Ethel Phiri

Dr Ethel E. Phiri is a lecturer and researcher at Stellenbosch University, focusing on the sustainable production and protection of indigenous, underutilised, and emerging crops. In 2014, she was nominated for the category *Young South African of the Year* in the South African of the Year awards. She has also been interviewed on the *1 000 African Voices* podcast, which profiles influential Africans. Dr Phiri has also featured in *Mail & Guardian's* '200 Young South Africans'. She is an award-winning biologist – her research for her master's degree earned her a medal of excellence. She is the Editor-in-Chief of the interdisciplinary *Journal of Underutilised Crops Research*, with a vision to place indigenous and neglected crops in the spotlight.