

Current Challenges in RDI Systems in South Africa

NSTF Discussion Forum

DAY 2: 14 August 2024

Speakers' Biographies



09:10-09:40

The STI Indicators and what they tell us about challenges to RDI in SA

Dr Nazeem Mustapha is a leading authority in R&D measurement and analysis, holding a PhD in Applied Mathematics with a specialisation in Cosmology from the University of Cape Town (UCT). He began his distinguished career as a lecturer in the Faculty of Engineering and the Built Environment at his alma mater. His expertise quickly led to a senior managerial position at Stats SA, South Africa's national statistical institute, where he was instrumental in developing national standards for statistical data management and pioneering forecasting models for early GDP estimates. During his tenure at Stats SA, Dr Mustapha also played a pivotal role in conducting pioneering research as part of a team that reviewed and improved business processes within the economic statistics complex, significantly enhancing the efficiency and accuracy of economic data collection and analysis.

Currently, Dr Mustapha leads the R&D measurement and analysis programme at the Human Sciences Research Council's (HSRC) Centre for Science, Technology, and Innovation Indicators (CeSTII), a flagship initiative of the Centre. He is at the forefront of innovation measurement within the informal sector, a field he has been instrumental in establishing, showcasing his commitment to advancing cutting-edge research in innovation measurement. Dr Mustapha's influence extends further, having expanded the scope of research measurement to include intellectual property, technology transfer in publicly funded institutions, and the innovation capabilities of strategic economic sectors, particularly State-Owned Enterprises and Mining. His global recognition as an expert is evident in his active participation in international conferences and his strategic advisory roles to provincial and national bodies on innovation measurement.



09:50-10:10

Perspectives of RDI challenges for wildlife biodiversity conservation in South Africa

Dr Desire Dalton has a PhD in the field of genetics from North-West University (NWU). In 2008, she joined the South African National Biodiversity Institute (SANBI) where she was responsible for providing scientific support and transferring research results into conservation action. She is currently working as a lecturer at Teesside University in the School of Health and Life Sciences (United Kingdom). Throughout her career, her primary research interests have focused on wildlife conservation genomics, ecology, animal forensics, taxonomy, and disease to contribute to the genetic management of wildlife species and populations in captivity and the wild.



10:10-10:30

Strengthening the Water RDI sector for improved water security (challenges, opportunities, and recommendations)

Dr Mamohloding Tlhagale is the Head of Partnerships and Business Development at the Water Research Commission (WRC) of South Africa. With 20 years of experience and a PhD in Management of Technology and Innovation, Dr Tlhagale has been an advocate of creating an enabling environment to support the creation, uptake and transfer of the South African scientific knowledge and innovation products in and beyond the borders of SA. Dr Tlhagale serves on 4 international Boards (Water Joint Programming Initiative, Human Right 2 Water, Water4All and Watermarq) and is a member of the African Water and Sanitation Association (AfWASA) Strategic and Technical Council (STC) contributing to shaping the local, African and international research, development and innovation agendas, programmes and improving international cooperation. She has been an adjudicator for the science, technology and innovation awards recognising South Africa's research and innovation excellence including the [NSTF-South32 Awards](#) and the Technology Top 100 Awards. Prior to joining the WRC, Dr Tlhagale practiced as a Medical Microbiologist and a lecturer at the Medical University of Southern Africa and Director for Strategic Partnerships at the South African Department of Science and Innovation (DSI). She is also a qualified Consciousness Coach, and has experience in facilitating workshops, conferences and strategic engagements with different stakeholder groups (local and international).



10:30-10:50

Ms Rosemary Wolson is the Vice-President for Innovation and Technology Transfer of the Southern African Research and Innovation Management Association (SARIMA), a professional organisation for technology transfer practitioners and research managers in the Southern Africa region. Rosemary has a BSc (Hons) in Microbiology, an LLB and an MPhil, from the University of Cape Town (UCT). She has worked in technology transfer at UCT, University of Johannesburg (UJ) and the CSIR. She has participated as a member or advisor to various stakeholder bodies; published in and carried out reviews for peer-reviewed publications; presented on innovation topics at local and international conferences and seminars; acted as a mentor; and provided training, facilitation and capacity-building for technology transfer.



11:05-11:25

Barriers to commercialisation

Dr Sean Perry is an engineer by profession with a PhD in Polymer Engineering, in the Department of Chemical Engineering. He has 17 years plus working experience in both research and development, parastatal organisation and private sector with immense knowledge in chemicals, materials engineering and water resource management. Dr Perry is a Wastewater Treatment expert especially in the area of Acid Mine Drainage (AMD). He has diverse experience in business development, intellectual property, commercialisation, portfolio management and stakeholder engagement. As a Business Development Manager, he has engaged intensely with the industries by being the bridge between SMMEs and the research sector and closes deals. Dr Perry has won multiple innovation and entrepreneurial awards, locally and internationally including in the UK, USA and Germany. He has numerous engineering publications in peer-reviewed journals.



11:25-11:45

Funding application and assessments and due diligence

Dr Nokuthula Mchunu is the Deputy Director at the Business Advancement Division of the National Research Foundation (NRF), working on open science and partnerships. Dr Mchunu has a wealth of experience in academia outreach programmes, the popularisation of science, and STEM with local communities. She was Senior Researcher at the Agricultural Research Council (ARC) in the Biotechnology Platform and her research focused on pathogen surveillance in wastewater, fungal genetics, Cannabis and Africa legume genomics. She completed her doctoral degree in fungal genomics and served as a senior scholar in a number of international institutions including the University of Cincinnati (USA), Lund University (Sweden), Tianjin University (China) and the Centre for Chemical Biology (Malaysia).



11:45-12:05

Challenges in RDI in biophotonics

Prof Patience Mthunzi-Kufa (OMB) holds a PhD (2010) in Physics (Biophotonics) from the University of St. Andrews, Scotland, UK. She is the first known person in SA to qualify for a PhD in this field of study. She is currently employed by the CSIR Photonics Centre (PC) as a Research Group Head for Biophotonics, specialising in advancing Point-of-Care Diagnostics and is part of PC's Management Team. Her work is varied, involving strategic leadership of her research group, project management, stakeholder engagement, securing funding, editing, and reviewing for international journals, external moderator, and member of the postgraduate committee at local universities, chairing grant review panels at the NRF, giving keynote addresses at international and local conferences, organising local and international conferences and student supervision among other things. She has published several popular science papers, peer reviewed journal and conference articles (some invited), filed patents and secured technology demonstrators and graduated many postgraduate students.

She has received the many awards and accolades, including:

- 2012: She was bestowed the Order of Mapungubwe in Bronze for her contribution in Biochemistry and Biophotonics both locally and internationally by President J. G. Zuma, making her the youngest recipient of such an honour. 2012: inducted into the South African Young Academy of Science (SAYAS)

- 2014: elected to serve as a co-chair of SAYAS
- 2012: selected by the DSI to represent SA young scientists and give recommendations to the Director-General on issues around SA – Europe (EU) Science and Technology cooperation
- 2012: listed as one of the “20 Youngest Power Women in Africa 2012” in the Alexander Forbes Magazine.
- 2013: named as one of the 100 “World Class South Africans” in the City Press Newspaper
- 2013: SA’s Most Influential Woman in Business and Government Award by CEO Communications.
- 2014: inducted into the Global Young Academy
- 2014: received the TechWomen Award from the government of the USA.
- 2015: became a TED Fellow, an international group of specialists sharing their novel ideas in Technology, Entertainment and Design.
- 2016: the Department of Basic Education (DBE) named the Block of Science within the Zojazem School of Specialization after her in recognition of her contribution to the Sowetan community.
- 2023: DSI SAWiSA Award under the category Distinguished Women Researchers, Harnessing Technological Change, and Innovation.
- This was followed by her appointment as Professor Extraordinarius at the University of South Africa (UNISA).
- 2024: Winner in the 2023/2024 NSTF-South32 Awards category [TW Kambule-NSTF Award: Emerging Researcher](#).

Currently, she serves on the following international steering committees: BRICS (Brazil, Russia, India, China, and South Africa) Photonics Working Group as the Nodal point, Society of Photo-Optical Instrumentation Engineers (SPIE – Committee Member and Student Chapter Advisor), L’Oréal Women in Science Awards, (Jury Member), and is the Chair for the IEEE Photonics Diversity Overseeing Committee.



12:50-13:10

Challenges in RDI at national health laboratory services

Dr Babatyi Malope-Kgokong is currently a Head of Academic Affairs and Research for the National Health Laboratory Service (NHLS), South Africa and a member of the Executive Committee of the National Science and Technology Forum (NSTF). She holds a PhD in Community Health from Wits. She also holds a Postgraduate Diploma in Economic Policies from the University of London (CeFIMS) and an MSc (Cum Laude) from the University of Limpopo (UL). She held academic positions at the following institutions - UL, University of Johannesburg (UJ) and worked as Epidemiologist and Data Manager at the Clinical HIV Research Unit and the National Institute for Communicable Diseases (NICD).

She has published peer reviewed journal articles as first author and co-author and with about 1290 citations with an h-index of 15 and an i10 index of 17. She served as a member of the National Health Research Committee (NHRC) appointed by the Minister of Health (2017 – 2020), the Health Professional Council of South Africa - Committee for Medical Scientists Task Team, member of the Clinical Trials Group Review Task Team and the National Conditional Grants Task Team.



12:50-13:10

South African Educational Research Association (SAERA) supporting young minds: Strengths and Challenges

Professor Melanie Luckay is the current president of the South African Educational Research Association (SAERA). She is the Head of the Educational Studies Department, Faculty of Education, at the University of the Western Cape (UWC). Her research expertise is focused on the technological literacy of pre-service teachers in schools within varied socioeconomic situations. As president of SAERA, she has seen firsthand the potential and problems that exist at various research levels, including early, mid-career, and established senior researchers. SAERA recognises the importance of mentorship in developing members by increasing SAERA's membership, boosting the early career researcher network, collaborating with research networks through its special interest groups, and growing its national and worldwide visibility. This is accomplished by encouraging collaborative activities across other disciplines, which play an important role in broadening its reach to early career researchers and supporting their growth and diversification within specialist interest communities. The

	<p>prestigious annual SAERA conference organised by several South African higher education institutions, as well as SAERA's annual activities, have allowed the organisation to reach more members and develop young researchers across disciplines and HEIs in SA and abroad.</p>
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