



NSTF Discussion Forum:

Research software as enabler and research output

in partnership with the NSTF Science Councils and Statutory Bodies Sector and
University of Cape Town (UCT) eResearch Centre



8 October 2026

Speakers Biographies:

9:15 - 10:00

Unpacking the NRF's Role in South Africa's Research Software Development



Mr Alistair White has a Bachelor of Science degree in Computer Science, obtained from the University of Pretoria (UP) in 2005. He has been working at the National Research Foundation (NRF) since 2010, and has largely focussed on business intelligence for both the NRF and external stakeholders. He has also developed the Research Output Submission System (ROSS) for the Department of Higher Education and Training (DHET), which is used by all South African higher education institutions for their annual research output subsidy claims.

10:00-10:25

Shaping International Research Software Policy



Dr Michelle Barker is the Director of the [Research Software Alliance](#) and brings extensive expertise in open science, research software, skills and infrastructure. As a sociologist, Michelle is passionate about building collaborative partnerships to achieve system change. She also works as an independent consultant in the field of open science, bringing expertise in leading international projects for the advancement of open research investments including in international policy; [FAIR research software](#); research infrastructure; open science skills, training, reward structures and career paths; and community engagement. Michelle is a former Director of the Australian Research Data Commons, where she led the national research software infrastructure investment program.

10:25-10:50

Policies concerning Publicly Funded Research Software in the Age of Artificial Intelligence



Dr Alan Paic is a Senior Policy Analyst in the Science and Technology Policy Division at the hands OECD. He leads work on open science and innovation policy reviews, notably in Kuwait, South Korea and Egypt. He has led the drafting of the [OECD Recommendation concerning Access to Research Data from Public Funding](#), a legal instrument signed by 41 countries, the associated [Toolkit for implementation](#) as well as numerous reports on the topic of open science.

Alan previously headed the Secretariat of the Global Partnership for AI, and before that, the OECD's regional programme for South East Europe, supporting reforms in competitiveness and innovation policy across the region.

Before joining the OECD, he worked as a particle physicist at CERN and later as a strategy consultant with Monitor Company and Stratorg. He holds a Ph.D. in particle physics from the University of Neuchatel and an MBA from INSEAD.

11:00-11:25

Open Science Eco-System and its Implications on Research Software



Dr Adrian Tiplady holds a PhD in Radio Astronomy, currently holds the position of Acting Managing Director at the South African Radio Astronomy Observatory (a National Facility of the National Research Foundation), which currently is responsible for implementing South Africa's strategic investments in radio astronomy. This includes construction and operation of the MeerKAT radio telescope, and leading South Africa's participation in the multi-national SKA project.

For the last two decades, Adrian has been primarily involved in South Africa's participation in the international SKA project – from the original compilation of Africa's successful bid to host the SKA, to the establishment of the SKA Observatory as an inter-governmental treaty organisation and establishment of a legally protected South African site to host the SKA telescope. He has substantial experience across the South African and international science and technology sector, whilst maintaining research interests in generating social impact through investments in research infrastructure. More recently he was appointed to the Expert Task Team responsible for development of South Africa's recently approved National Open Science Policy.

11:25-11:50

The role of Research Offices in supporting research software as research outputs?



Ms Natalie le Roux is a Senior Research Support Manager in the Research Office at the University of Cape Town (UCT), South Africa (SA), where she leads the Research Support Services Unit. She provides strategic leadership for research services that strengthen UCT's research enterprise, including support with research funding proposals, administration of institutional and national research funding, research governance and statutory reporting requirements to the DHET.

A registered Research Psychologist with the Health Professions Council of South Africa (HPCSA) since 2002, Natalie has more than 25 years of experience in educational research, research management and administration (RMA). She is an International Professional Recognition Council (IPRC)-accredited Senior Research Management Professional (SRMP), a member of the Psychological Society of South Africa (PSYSSA) and member of the Southern African Research and Innovation Management Association (SARIMA).

Natalie is recognised for her leadership in strengthening institutional research capacity and advancing professional practice in research management and administration.

11:50-12:15

Repeatability and transparency, why code belongs in the main text



Dr Christel Hansen is a senior lecturer in the Department of Geography, Geoinformatics and Meteorology at the University of Pretoria (UP). [A geomorphologist and GIS specialist by training](#), she has research interests in cold-climate geomorphology, Antarctic landscapes and ecosystems, active layer and permafrost dynamics, landscape and process studies, desert environmental studies, and remote sensing. Her technical expertise is focused on Geographic Information Science (GISc), in particular geospatial statistical analyses, terrain analyses, spatial Multi-Criteria Decision Analysis (MCDA), and (related to geomorphology) ground temperature and moisture dynamics, textural-fraction-related work, and morphometrics. Recently, she has focused more on the applied use of GISc in various fields and collaborates with colleagues from engineering, renewable energy science, archaeology, hazard/risk modelling, ecology, zoology, and remote sensing. She also has extensive fieldwork experience, having spent 4 summer seasons in western Dronning Maud Land, Antarctica, one season on sub-Antarctic Marion Island, and completed numerous fieldwork trips to the High Drakensberg of South Africa. Christel has also done fieldwork in the Altai Mountains of Russia.

Through her involvement in the Association of Polar Early Career Scientists ([APECS](#)) and [APECSSA](#), Christel has also helped organise numerous workshops, meetings, and webinars, and served as President of

the [Southern African Association of Geomorphologists \(SAAG\)](#) 2019-2021. She was also a member of the South African National Committee to the [Scientific Committee on Antarctic Research \(SCAR\)](#) from 2019 to 2026 and has represented South Africa on the [Standing Committee on Antarctic Geographic Information \(SCAGI\)](#) since 2021. She is also a Geomatics Professional (GPr GISc1194) with the [South African Geomatics Council \(SAGC\)](#), the South African representative on the [UN-GGIM Academic Network](#), and is the current Editor of the [South African Journal of Geomatics](#).

12:30-13:00 (PANEL DISCUSSION)



Prof Roger Deane is the Director of the Inter-University Institute for Data Intensive Astronomy (IDIA) and Professor in the UCT Department of Astronomy, as well as an Extraordinary Professor at UP. He completed his DPhil in Astrophysics at the University of Oxford in 2012. Between 2018-2025, he established the Radio Astronomy Research Group at UP and held the DSTI/NRF SKA Chair in Radio Astronomy at the University of the Witwatersrand (Wits), where he also served as Director of the Wits Centre for Astrophysics. His research focuses on the cosmic evolution of galaxies and their supermassive black holes, leveraging cutting-edge radio telescopes and advanced computational techniques. He is an active member of several large international collaborations, particularly those associated with the multi-billion-dollar Square Kilometre Array (SKA) Observatory, and was part of the global team that captured the first image of a black hole in 2019. A passionate advocate for public science engagement, he led the R70-million digital upgrade of the Johannesburg Planetarium and received the 2023 NSTF-South32 Communication Award.



Prof Vukosi Marivate is a Professor of Computer Science, holds the ABSA UP Chair of Data Science, and is Director of the African Institute of Data Science and AI (AfriDSAI) at UP. He specialises in developing Machine Learning (ML) and Artificial Intelligence (AI) methods to extract insights from data, with a particular focus on the intersection of ML/AI and Natural Language Processing (NLP). His research is dedicated to improving the methods, tools and availability of data for local or low-resource languages. As the leader of the Data Science for Social Impact research group in the Computer Science department, Vukosi is interested in using data science to solve social challenges. He has worked on projects related to science, energy, public safety, and utilities, among others. Prof Marivate is a co-founder of Lelapa AI, an African startup focused on AI for Africans by Africans. Vukosi is a co-founder of the Masakhane Research Foundation, which aims to develop NLP technologies for African languages. Vukosi is also a co-founder of the Deep Learning Indaba, the leading grassroots ML and AI conference on the African continent that aims to empower and support African researchers and practitioners in the field. Vukosi is a member of the Independent Scientific Panel for AI for the UN and a member of the African AI Council at Smart Africa. Prof Marivate and his team TextAugment received the inaugural NSTF-SADiLaR Award for Human Language Technologies (HLT) at the NSTF-South32 Awards in 2026.



Mr Juan Steyn is the Director of Operations at SADiLaR. He has been involved in multiple Digital Humanities and Educational technology related projects. He also has a special interest in training and capacity building. Currently he serves as the president of the Digital Humanities Association of Southern Africa (DHASA), Member of the Research Software & Systems Engineers of Africa (RSSE Africa) leadership

team and he is a member of the National Task Team appointed to develop a Unified Language Action Plan for South Africa focussing on Human Language Technologies related work.



Dr Tshiamo Motshegwa is the inaugural Director of the African Open Science Platform (AOSP) with the strategic portfolio to direct and support the AOSP in its mandate to advance, coordinate and amplify impact of open science in Africa. AOSP convenes and coordinates the interests, ideas, people, institutions and resources for open science in and for Africa and aims to position African scientists at the cutting edge of data intensive science. In this role, Dr Motshegwa engages with communities of practice, institutions – and engages Nationally, in the African Union (AU) Regional Economic Communities (RECS) and with AU and UN systems, structures – including in committees and taskforces for policy frameworks. Dr Motshegwa has a Ph.D. in Computer Science from City St Georges, University Of London, UK at the School of Mathematics, Computer Science and Engineering.

13:30-13:55

From Research Data and Computational Methods to Policy Intelligence and Societal Impact at the HSRC



Dr Mercy Ngungu is the Senior Research Specialist at the Human Sciences Research Council (HSRC), South Africa. She specialises in research impact assessment, monitoring and evaluation, advanced data analytics, and the application of digital technologies to strengthen research evidence and decision-making.

Her work focuses on integrating research software, statistical and computational methods, data management systems, and interactive dashboards to support evidence generation, research performance monitoring and policy intelligence. She has extensive experience in designing data and evidence architectures, developing monitoring and evaluation frameworks, and supporting multidisciplinary research programmes across Africa.

Her professional interests include artificial intelligence and machine learning in research, research data governance, reproducible analytical workflows, and the development of interoperable, AI-ready research systems that enhance the accessibility, quality and impact of scientific evidence.

14:00-14:25

From Research Models to Operational Products: Bridging Scientific Research and Software Engineering



Mr Mxolisi Ngwenya is a Senior Software Engineer at the South African National Space Agency (SANSa), with eight years of professional experience in software engineering, predominantly in Python. His engineering background is rooted in Computer Systems Engineering, with experience spanning embedded systems design and development, software engineering, financial services, consulting, advertising and, more recently, space science.

At SANSa, Mxolisi works at the intersection of software engineering and scientific research, developing and maintaining software systems that support space-weather activities. His work includes developing applications using Python and frameworks such as Django, Flask and Litestar, maintaining C#/.NET systems, developing data visualisation solutions, and working closely with researchers to optimise predictive models and prepare them for production deployment.

His broader engineering experience includes the development of RESTful APIs, microservices, automated processes, database systems and cloud-based solutions, as well as DevOps and data visualisation. He has also worked on image-processing and classification applications using OpenCV and has contributed to the evaluation and adoption of technologies aimed at improving software development and research workflows.

Mxolisi's interest lies particularly in the role of research software as an enabling layer between scientific knowledge, computational methods and practical applications. His experience working alongside researchers has given him insight into the challenges of translating scientific algorithms, models and experimental software into reliable, maintainable and operational systems.

He is particularly interested in strengthening the relationship between scientific research and software engineering, promoting sound engineering practices within research environments, and improving the sustainability, reproducibility and long-term value of software developed as part of scientific research.