



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



7 October 2026

Speakers Biographies:

09:15-09:55

Research software as enabler and research output



Mr Peter van Heusden is a bioinformatician and researcher at the South African National Bioinformatics Institute (SANBI) at the University of the Western Cape (UWC), where his work focuses on pathogen genomics and bioinformatics workflows. With a background in scientific systems administration, he brings an infrastructure-oriented perspective to bioinformatics, leading initiatives to develop reproducible computational tools and training programmes, particularly in support of infectious disease research, such

as tuberculosis and emerging outbreaks. He is a co-founder of the Research Software and Systems Engineering Africa (RSSE Africa) community and has advocated for greater recognition, support and sustainability of research software and the people who develop it for more than a decade. Peter is actively involved in capacity-building across Africa, contributes to open science and the Galaxy bioinformatics community, and combines research with teaching in areas such as Python, genomics, and scientific computing.



Ms Anelda van der Walt is a Senior eResearch Analyst at the University of Cape Town (UCT), where her work focuses on research software, digital research infrastructure, open science, and institutional support for digitally enabled research. She is also the founder of Talarify and co-leads the Research Software and Systems Africa community (RSSE Africa). Anelda has a background in Bioinformatics and brings a systems-oriented perspective to the people, practices, policies, and technologies that enable modern research. Her work includes developing research software support programmes, designing professional development initiatives, and contributing to national and international discussions on the recognition, sustainability, and governance of research software. She is pursuing a PhD in Information Science at the University of Pretoria (UP), examining how research software is understood, categorised, and supported within the South African research system. She is actively involved in capacity-building and community development across Africa, connecting researchers, software practitioners, institutions, and infrastructure providers through training, strategy, advocacy, and community building.

09:55-10:20

The missing middle - Who employs the people who maintain research software?



Prof Mattia Vaccari is an Astroinformatics Research Professor at the Department of Astronomy of UCT and the Director of the UCT eResearch Centre, where he coordinates the digital research support infrastructure, tools and services. He works in the office of the Deputy Vice-Chancellor for Research and

Internationalisation on the digital research architecture underpinning UCT's research strategy.

An astronomer by training, he studies the evolution of galaxies using MeerKAT and the MIGHTEE survey, and is affiliated with the Inter-University Institute for Data Intensive Astronomy (IDIA) and the ilifu research cloud. He has contributed to software development for space missions, numerical simulations and signal processing. He co-authored some 250 refereed papers and holds an NRF B2 rating.

His work on research software spans advocacy, training, community building and institutional capability design. He is a co-author of "Research software: a key (neglected) component of the digital research infrastructure ecosystem" (South African Journal of Science, 2025 - <https://journals.co.za/doi/10.17159/sajs.2025/21437>) and the UCT eResearch Centre, with SADiLaR, helped initiate and conceptualise the NSTF Research Software Awards.

10:30-10:55

From Code and Platforms to Impact: Research Software in Biostatistics and Public Health



Prof Tarylee Reddy is the Director of the Biostatistics Research Unit at the South African Medical Research Council (SAMRC) and Honorary Professor at UCT. She holds the position of Secretary of the International Biometric Society (2024-Present) and Co-Chair of the IBS Mentorship Oversight Task Force (2021-Present) and President of the South African Region of the International Biometric Society (2023-Present). She holds a PhD in Statistics (2017) from the University of Hasselt in Belgium. She is the Principal Investigator of the STEAM-3D project, which seeks to develop inclusive, African-led capacity in infectious disease modelling and strengthen collaboration across the continent.

Prof Reddy's research interests include the analysis of complex longitudinal data, and she has led several projects in this area. Her work also involves developing and maintaining data, statistical and research software infrastructure for collaborative health research and capacity development. Prof Reddy has authored and co-authored more than 200 peer-reviewed publications. She was a 2021 winner of the InspiringFiftySA award, as well as a recipient of a Silver SAMRC Scientific Merit Award in 2023. In 2023 she was awarded the Paul Janssen Award for Statistical Collaboration in the South.

10:55-11:20

Hardware is not enough: research software as enabler and output at South Africa's national HPC



Mr Mthetho Vuyo Sovara is a Senior Research Engineer at the Centre for High-Performance Computing (CHPC), part of the Council for Scientific and Industrial Research (CSIR), working across research software engineering (RSE), high-performance computing (HPC), and Earth and space-science research. He develops and supports scalable, reproducible computational workflows and research software that enable complex scientific modelling and large-scale data analysis on South Africa's national research infrastructure, with a growing focus on integrating AI and machine learning into climate and weather modelling.

11:30- 11:55

Beyond the Data Portal: From Scripts to Systems - Evolving Research Software for Environmental Science at SAEON



Dr Marc Pienaar is the Data Science Team Lead at the South African Environmental Observation Network (SAEON) uLwazi Node, where he leads the development of research software, environmental data systems, and analytical platforms that support long-term environmental observation and interdisciplinary research. His work combines data engineering, geospatial analysis, software development and environmental science, with a focus on making complex data accessible, interoperable and reusable.

He holds a PhD in Electrical Engineering from UCT, with research in wavelet analysis, time-series classification and machine learning. His earlier Earth science work included optically stimulated luminescence and radiocarbon dating for archaeological and Quaternary research. Before joining SAEON in 2019, he was a Senior Scientist in the CSIR's Global Change and Ecosystems Dynamics group.

With more than 20 years' experience in scientific research, software development and data analysis, his

interests include sustainable research software, open data, APIs, automation and digital infrastructure for environmental science and evidence-based decision-making

11:55-12:20

Drop in the Digital Ocean: The Development of a Smartphone-based System for Water Quality Monitoring in South Africa using Machine Learning Techniques



Ms Sanet Witbooi is a multidisciplinary engineer and technology professional from Willowmore, SA. Her academic background spans biomedical engineering, electrical engineering with honours, and a Master's degree in AI, completed with distinction at the University of the Witwatersrand (Wits).

Her work has taken her across engineering, applied research and software development. She has experience in biomedical and diagnostic technology, machine learning, computer vision, environmental monitoring and developing enterprise software. She currently works as a Software Engineer at Ninety-One, where she develops and supports systems used across the firm's research, markets and financial functions.

Sanet is particularly interested in the intersection of engineering, technology and society, and in translating research and technical ideas into practical solutions that can have meaningful impact across different socio-economic contexts.

13:00-13:20

Code for conservation: The data science evolution of South Africa's National Biodiversity Assessment



Dr Lize von Staden is a senior scientist in the National Biodiversity Assessment Unit at the South African National Biodiversity Institute (SANBI) and a Research Associate at Nelson Mandela University (NMU). She

develops biodiversity indicators for national monitoring and her research focuses on the effectiveness and impact of biodiversity policies. She designed and manages SA's National Biodiversity Assessment website and is currently leading a project to improve national reporting capacity for the Kunming-Montreal Global Biodiversity Framework.

13:30-13:55

The role of research software at the Council for Geoscience (CGS)



Dr Patrick Cole obtained a Ph.D. from Wits in 2018. He has been working at the CGS since 1996 and managed the geophysics unit between 2004 and 2012. He was instrumental in the airborne operation at the CGS, both from a technical and management point of view. Subsequent to this he developed an open-source package for the interpretation and modelling of geoscience data, which includes potential field data in 3D and multivariate statistical analysis. He is involved in remote sensing and Python software development. He is currently a chief scientist in the Minerals, Energy, Environment and Groundwater unit.