

Ocean science for sustainable development

15 November 2023

Speakers' Biographies



09:10-09:50

Unlocking the blue economies and protecting our coastlines from the effects of climate change

Prof Andrew Green is a marine geologist by training and holds a PhD from the University of KwaZulu-Natal (UKZN – 2009) and an MSc *cum laude* (2003) from the former University of Natal. He was a Fulbright scholar at Woods Hole, the University of Texas at Austin, and the University of Maine in 2018, and was awarded the American Geophysical Union's Africa award for excellence in Marine Sciences in 2019. Prof Green is currently Full Professor of Marine Geology and Sedimentology at the UKZN where he is the head of the Marine Geology Research Unit.

His current research interests include the stratigraphy and morphology of continental shelves, and their potential as archives of abrupt changes in sea level throughout the Pleistocene and Holocene. He is also involved in examining the stratigraphic evolution of coastal waterbodies, including estuaries, lakes and large marine embayments in the search for lower than present sea level indicators. His further interests lie in the use of coastal and marine deposits as archives of climate change, especially extreme weather events over the last 11 000 years. He hopes that these studies will inform coastal planning and management in light of the expected future changes to sea level and climate.

Prof Green has graduated 7 PhD and 13 MSc students to date and published widely, with 100 peer reviewed publications, over 90 of which are in the international literature. He was editor in chief of Geo-Marine letters from 2017 to 2021 and is an associate editor of Marine and Petroleum Geology and Nature Communications Earth and Environment. He sits on the editorial boards of Frontiers in Marine Geoscience and the South African Journal of Geology. He currently supervises ~ 20 doctoral and masters students all working on the marine geology of continental shelves and coasts from around the globe.



10:00-10:30

What observation of the ocean is being done in SA, and what data is available?

Prof Juliet Hermes leads a team focusing on observations, modelling and research of the marine environment around southern Africa as part of the National Research Foundation's (RF) South African Environmental Observation Network (SAEON). In addition Juliet manages the South African Polar Research Infrastructure and is a Professor at the University of Cape Town (UCT) and the Nelson Mandela University (NMU). She has significant experience with developing and managing national, regional, and international multidisciplinary, ocean observations. Her passion is in fostering regional and international collaborations as well as capacity development. Juliet focuses attention on development through ensuring knowledge generation and sharing, as well as growing a diverse cohort of marine scientists. Juliet is currently part of the African Task Force for implementing the Ocean Decade and chairs the CLIVAR Indian Ocean Regional Panel, and the Indian Ocean Rim Association Academic Group. Her work through these and her involvement in GEO Blue Planet, GCOS and the African Group Negotiators Experts Support she has gained experience in working with policy. She supports global ocean observing systems through the GOOS Observation Coordination Group, as well as their standards and best practices through the IOC/GOOS Ocean Best Practices Group.



10:30-11:00

Prof Jasper Knight is Professor of Physical Geography at the University of the Witwatersrand (Wits).

<p><i>Coastline responses to climate change in South Africa</i></p>	
<div> </div> <p>11:00-11:30</p> <p><i>South Africa and the UN Ocean Decade: The Science we need for the Ocean we want - Is NEMA sufficient?</i></p>	<p>Prof Ashley Johnson studies Physical Oceanography at both the University of Cape Town (UCT) as well as Universite de Bretagne Occidentale (France). His career as a scientist in ocean-atmosphere interaction commenced with the Department in 1996. Prof Johnson’s study interest changed into ocean dynamics and more precisely ocean modelling using 3D hydrodynamic systems, however still focused on ocean-atmosphere interaction and forcing as well as how the ocean would react to extreme changes forced onto it by the atmosphere. This allowed my interest to grow into Climate Science, specifically ocean dynamics and impacts on the other elements of the Earth System. He has been the Director for Oceanographic Research at the Department of Forestry, Fisheries and the Environment (DFFE) since 2006. Internationally my engagement has been across intergovernmental bodies such as the Intergovernmental Oceanographic Commission (IOC) of UNESCO and its programmes. He also served on the Steering Committee of the IOCs Global Ocean Observing System (GOOS) and deeply rooted into the Second International Indian Ocean Expedition (IIOE2) as well as the UN Ocean Decade. Prof Johnson’s interest in the Ocean Decade is to ensure meaningful and sustained ocean observations from the African Continent and the growth of human and institutional capacity.</p>
	<p>Dr Cloverley Lawrence is a marine scientist, with a broad research focus that delves into understanding the intricate processes within marine ecosystems and identifying key drivers of ecosystem change. The knowledge and information she generates through research and monitoring serve as a foundation for management and decision-making. Passionate about the health of our oceans, Dr Lawrence actively supports initiatives aimed at reversing the cycle of decline in marine and coastal health. She advocates for collaboration and unity among diverse stakeholders, emphasising the need for collective efforts to ensure the sustainable</p>



11:30-12:00

Navigating Science for Sustainable Decision making: The case of the African Penguin

development of the ocean environment. Her work strives for tangible impact on conservation efforts with the goal of maintaining the balance of natural ecosystems, particularly within protected areas.



Dr Sara Andreotti is a marine biologist, extraordinary lecturer of Stellenbosch University, working toward the development of a global long-term management system and conservation plan for sharks since 2009. She completed her PhD at Stellenbosch University in March 2015; her research involved genetic techniques and photographic identification to better assess the population status and dispersal events of South African white sharks. The outcome was the first national assessment of white shark population numbers and genetic structure, and the genetic work recently expanded in an international collaboration with the University of Queensland and Flinders University (Australia). Sara is now focusing on her own research and more recently also supervising two PhD and three Master students. Further, following her passion for shark conservation, Sara co-founded SharkSafe Barriers (Pty) Ltd, a South African company aiming to provide an eco-friendly and shark-specific technology to keep swimmers and surfers safe from large predatory sharks; she is one of the four co-inventors of the SharkSafe Barrier™, a patented technology which successfully biomimics the visual effects of a kelp forest and combines this with a series of permanent magnetic stimuli to form a barrier that

	<p>dissuades sharks from passing through, without affecting other marine life. The SharkSafe Barrier™ aims to be the ultimate solution for a peaceful coexistence between beach goers and large sharks, for rejuvenating both the local ecology and tourism of coastal areas. Sara is currently the COO and one of the Founding Directors of SharkSafe Barrier Pty Ltd</p>
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