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## SORS: Detecting, attributing, and predicting the effects of climate change on biodiversity and health at actionable timescales

**Onyekachi Ogunniyi - African Climate & Development Initiative, University of Cape Town, South Africa**



**Short bio:** Onyekachi is a Postdoctoral

research fellow at the African Climate and Development Initiative (ACDI) with interest in climate change impact detection, attribution, and decadal prediction on climate-sensitive diseases to inform disease control and prevention strategies. She obtained her PhD in Public health from the University of KwaZulu-Natal, South Africa in 2023. Her thesis focused on the distribution, abundance, and infection rates of human schistosomiasis host snails in KwaZulu-Natal, South Africa. She made contributions in the scientific community through her publications in high impact journals on the effect of climate change on vector-borne diseases. She predicted the habitat suitability of human schistosomiasis intermediate host snails in KwaZulu-Natal province under different climatic scenarios.

**Title:** Detection, attribution, and decadal prediction of climate change impact on health outcomes

**Abstract:** Climate change impacts on health are increasingly apparent with regular exposure to intensive heat waves, surges and emergence of diseases, and mortality. Quantification of these impacts and tracing them to anthropogenic climate change has been difficult to measure but is essential in building evidence towards prioritising climate mitigation action. Onyekachi will present an overview of detection and attribution of climate change impacts on human health and its prospects on loss and damage calculations, risk assessment, and health system preparedness and response.

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**Collins Matiza - African Climate & Development Initiative, University of Cape Town, South Africa**

**Title:** Detecting and attributing climate change-driven shifts in terrestrial ecosystem vegetation activity

**Abstract:** Climate change is disrupting the normal functioning of Earth's systems. However, detecting changes in vegetation dynamics and structure, and attributing them to human-induced climate change, has proved difficult. Collins will explore how recent advances in AI offer new tools for analyzing vegetation dynamics from satellite data. He will present how he is applying these tools to detect and attribute changes in the vegetation dynamics of protected areas in South Africa.

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**Andreas Schwarz Meyer - African Climate & Development Initiative, University of Cape Town, South Africa**



**Short bio:**

Andreas is a biodiversity data scientist interested in studying the impacts of climate change on species, ecosystems, and people. His research focuses on using computational tools to predict when and where climate risks will emerge, and how to respond to them. He is also interested in exploring the potential risks to biodiversity from climate interventions such as carbon dioxide removal.

**Title:** Biodiversity horizons: towards a framework for predicting climate risks to biodiversity at actionable timescales

**Abstract:** Climate change is increasingly exposing biodiversity to harmful temperatures, resulting in range shifts, die-offs, and population declines. However, most biodiversity projections focus on a few specific time points, typically near the end of the century. This limited temporal scope constrains our ability to (1) predict when and how quickly species will be exposed to dangerous temperatures, and (2) capture the risks posed not only by changes in long-term climate averages but also by the increasing frequency and intensity of extreme temperatures. Andreas will show how using climate data at higher temporal resolutions (e.g., yearly projections) has revealed previously unknown aspects of climate risk to biodiversity, and how even finer resolutions (weeks and months) can provide critical information for biodiversity scientists and conservationists in both fundamental and applied research.

## Speakers

**Speaker:** Onyekachi Ogunniyi, Collins Matiza, Andreas Schwarz Meyer. University of Cape Town, South Africa

**Host:** Markus Donat. ICREA Research Professor, Climate Variability and Change Group Co-Leader, Earth Sciences, BSC  
Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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