MSc opportunities in aquatic environmental DNA metabarcoding

Stellenbosch University

Are you interested in marine conservation using cutting-edge technology? Then see below…

Two MSc positions (2 years, full time) are available in the lab of Prof. Sophie von der Heyden lab at Stellenbosch University, one of Africa's leading marine research groups specializing in the use of molecular tools to understand patterns and processes driving southern Africa's rich marine biodiversity. We are a dynamic and diverse lab, with a strong emphasis on research excellence as well as student training and support. Our work spans evolutionary and molecular ecology, ecological genomics, marine conservation and restoration and the impact of climate and anthropogenic pressures on marine systems. To do this, we utilise a wide range of tools including genomics and environmental DNA metabarcoding, with our overarching goal of promoting the integration of molecular tools into conservation and sustainable utilization of southern African marine species and resources. You can find out more about the von der Heyden lab and our research: www.vonderheydenlab.com or via FB www.facebook.com/vonderheydenlab.

Project 1: Combining ten years of eDNA data for southern African fishes
Project 2: Trialling the use of 'metaprobes' for the detection of offshore marine biodiversity

Recent publications on eDNA metabarcoding from our lab:

1. Courtaillac K-L, Landschoff J, von der Heyden S. (2025) Of biogeography, fishes and kelp: environmental DNA metabarcoding the Great African Seaforest. *Diversity and Distributions*, in press
2. Rossouw EI, von der Heyden S, Peer N. (2025) Aquatic eDNA outperforms sedimentary eDNA for the detection of estuarine fish communities in sub-tropical coastal vegetated ecosystems. *Journal of Fish Biology*, in press
3. Courtaillac K-L, Landschoff J, Hull K, von der Heyden S. (2024) The effect of spatio-temporal sampling and biological replication on the detection of kelp forest fish communities using eDNA metabarcoding. *Environmental DNA*, 6: e70023
4. Rossouw EI, Landschoff L, Ndhlovu A, Neef G, Miya M, Courtaillac K-L,Brokensha R, von der Heyden S. (2024) Detecting kelp-forest associated metazoan biodiversity with eDNA metabarcoding. *npjBiodiversity*, 3: 4
5. von der Heyden S, Neef G, Grevesse T, Cwecwe Y, Sado T, Miya M,Mosie I, Creer S, Skelton, von Brandis R. (2023) Environmental DNA biomonitoring in biodiversity hotspots: a case study of fishes of the Okavango Delta. *Environmental DNA*, 5: 1720 – 1731
6. von der Heyden S. (2023) Environmental DNA surveys of African biodiversity: state of knowledge, challenges and opportunities. *Environmental DNA*, 5: 12-17

Applicants for the positions will hard-working, enthusiastic and independently motivated students and able to fit into a fun and diverse lab. You will need an average of at least 65% for your Honours degree. Ideally you would have some experience in molecular methodologies (even basic applications such as DNA extractions, PCR and sequencing are a bonus), have had some exposure to bioinformatics and some background in marine/estuarine ecology or biodiversity. We provide training in all analytical methodology and this is a great opportunity for students who wish to gain more exposure in genomics, bioinformatics and their application to conservation. You will need to apply independently to the current NRF Postgraduate funding call (with support) and there are also opportunities through Stellenbosch University funding (the deadline for this at SU is the 4th July 2025).

Direct all enquiries to Prof Sophie von der Heyden, svdh@sun.ac.za. For applications to be considered, include an academic transcript, CV and two academic referees. Closing date for applications is the 19th June 2025.