

**The University of KwaZulu-Natal (UKZN) is committed to Employment Equity. Preference will be given to applicants from the designated groups in accordance with our Employment Equity Plan.**

**COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE**

**POST DOCTORAL RESEARCHER: Hydrology/Geohydrology  
/Isotope Hydrology/Geophysics/Geosciences**

**TWO YEAR FIXED TERM APPOINTMENT  
School of Agricultural, Earth and Environmental Sciences  
PIETERMARITZBURG CENTRE**

**REF NO: CWRR 01/2024**

The University of KwaZulu-Natal (UKZN) recognises water as an important component that underlies some of its strategic research flagship programs. The University of KwaZulu-Natal has a wide range of (ground) water-related expertise and, in support of its vision to be the Premier University of African Scholarship, is actively involved in water-related teaching, research and outreach activities throughout Africa and beyond. With the threat of water scarcity growing, South Africa embarks on the Groundwater Strategy (GS). The strategy is designed to ensure that groundwater is quantified, recognised, utilised and protected as an integral part of South Africa's water resource. Lack of high-quality groundwater data/information/knowledge hinders the sustainable use and management of groundwater resources and in factoring its role in national water resources accounting.

In response to the national strategies and the university's flagship programs, a team of academics are currently generating high-quality knowledge on groundwater resources through various research initiatives at the Discipline of Hydrology and the Centre for Water Resources Research (CWRR) at UKZN. The CWRR was formed in 2012 out of a cohesive group of academics who have been active in research, teaching and capacity building related to hydrology and water resources research. The team aims to characterise the multi-scale (shallow <30m, intermediate <150 m, and deep >150m; hillslope-basin scale) groundwater flow along the Drakensburg-Indian Ocean transects (along uMgeni, uThukela, Inkomati, etc.) in an attempt to improve national scale accounting of total water balance and to improve the representation of groundwater of the Karroo sedimentary basin (4.5 million sq km) in the emerging global scale land-surface models (LSMs). LSMs aim to simulate the interaction of water and energy at the Earth Surface-Atmosphere Interface.

The postdoctoral researcher will have the following roles:

1. Research, publication, communication
  - Water isotope characterisation of rainfall waters from the rainwater collection stations established within the KwaZulu Natal Region and the wider Southern Africa region
  - Develop a conceptual model for the representation of the multi-scale groundwater flow in the Eastern Karroo Sedimentary basin- using isotope, chemistry and piezometric data collected at nested timescale
  - Take a leading role in the writing of scientific communications, presentations and the development of new research proposals
  - Serve as co-supervisor for current and future postgraduate students within the Hydrology specialisation area
2. Stakeholder engagement:

- The successful application will work closely with various groups of researchers to further expand their network. The candidate will work closely with the CWRR team on integrating groundwater into the national scale of water availability accounting models being developed.
3. Service to the School
- The appointed postdoctoral fellow is further expected to assist the School and research area with their research endeavours oversee common research equipment within the School, and mentor Masters and doctoral students.

### Minimum Requirements

- PhD in hydrology or related disciplines (e.g. geohydrology, hydrogeology, geosciences, geophysics), with evidence of field and laboratory experience in the application of isotope in hydrological processes investigation
- A proven research record as evidenced by at least three recent publications in peer-reviewed ISI/DHET-rated journals.
- Computer simulation and/or statistical modelling skills
- Experience working in multi-disciplinary teams.

### Advantages

- Good hands-on laboratory experience
- Valid driver's licence and driving experience
- Knowledge of GIS and remote sensing application

Candidates who are self-motivated, rigorous and responsible, with a track record showing the ability to conduct independent research work and publications in reputable journals are encouraged to apply. The closing date for applications is 08 August 2024; however, this advert will remain open until the position is filled. Funding is available for one year with possibility of extension in to the second year up on successful performance during the first year.

This appointment will be made in line with the University Guidelines/benchmarks, which are available on the University Vacancies website at <http://vacancies.ukzn.ac.za/Academic-Process-Proc-Guides.aspx>.

Applications should consist of the following:

1. A letter of motivation; 2. A detailed CV.; 3. Full academic records; and 4. The contact details of two academic referees. Applications should be submitted to Dr Maqsooda Mahomed ([MahomedM@ukzn.ac.za](mailto:MahomedM@ukzn.ac.za)) with cc to: [Kebedegurmessas@ukzn.ac.za](mailto:Kebedegurmessas@ukzn.ac.za). For further information, please email Prof Seifu Kebede Gurmessa at [Kebedegurmessas@ukzn.ac.za](mailto:Kebedegurmessas@ukzn.ac.za).

***Kindly note that the University of KwaZulu-Natal (“the University”) is required to process any Personal Information (as defined by the Protection of Personal Act, 2013 “POPIA”) submitted by candidates when applying for positions at the University. The University will endeavour to ensure that the appropriate security measures are in place and implemented for both electronic and paper-based formats that are used for processing of the personal information recorded through this recruitment and selection process. We refer you to the University’s relevant Section 18 notice at***

***<http://vacancies.ukzn.ac.za/Libraries/General Documents/Section 18 Notice - Employees and Potential Employees.sflb.ashx>***