

University of South Africa
Department of Environmental Sciences
Florida Science Campus

Post-doctoral Fellow Position

Position Overview:

The Department of Environmental Sciences in the University of South Africa (UNISA) - Florida Science Campus invites applications for Post-doctoral Fellowships in data analytics, remote sensing, GIS and numerical modelling with applications in aquatic and environmental sciences. This position supports ongoing and forthcoming projects in the aquatic science research group, focusing on applying remote sensing imagery to map environmental changes in aquatic ecosystems within Southern Africa.

The project integrates remotely sensed data, geospatial mapping, and modelling tools to assess water quality variability and its impact on aquatic biodiversity. The successful candidate will collaborate with a multidisciplinary team from UNISA and partnering institutions and is expected to contribute to scientific advancements through peer-reviewed publications and conference presentations.

Key Responsibilities:

- Conduct independent research in aquatic ecology and environmental monitoring.
- Apply data analytics and machine learning techniques to analyse environmental changes over time.
- Utilise geoprocessing tools and GIS platforms (Google Earth Engine, ArcPy, QGIS) for spatial analysis.
- Develop and implement predictive models for hydrological and ecological studies.
- Integrate and analyse diverse datasets (water quality, climate, land use) for spatial and statistical analysis.
- Mentor and collaborate with postgraduate students
- Publish research findings in high-impact peer-reviewed journals and present at scientific conferences.
- Collaborate and participate in research development through proposal writing for grant applications and other fundraising activities.
- By the end of the fellowship, the candidate is expected to have published a minimum of six peer-reviewed articles (2/year) and contributed to collaborative grant submissions.



Minimum Requirements:

- PhD in Environmental Science, Aquatic Ecology, Geoinformatics, Earth Science (Hydrology, Hydrogeology), or a closely related field.
- The candidate should not have served as a postdoc elsewhere, nor be currently serving as one.
- Expertise in water quality and biological monitoring in aquatic ecosystems
- Strong programming skills in Python, R, MATLAB, with experience in machine learning applications.
- Proficiency in remote sensing tools (Google Earth Engine, ENVI).
- Experience with geospatial analytics (ArcGIS, QGIS, GRASS GIS) and spatial statistics.
- Strong record of primary contributions to peer-reviewed publications.
- Proficiency in handling large datasets and applying data wrangling, analytics, synthesis, and management.
- Strong analytical skills in geospatial modelling and time-series data analysis.
- Ability to disseminate project findings effectively to scientific and non-scientific audiences.
- Proven ability to work collaboratively in a multidisciplinary research environment.


Additional Information:

- The Postdoctoral fellowship is based at the Florida Science campus of the University of South Africa
- Duration: 3-year contract (renewable every year based on performance and funding),
- Preferred Start Date: 1st of June 2025
- The university offers competitive remuneration aligned with institutional guidelines

Application Details:

Interested candidates should submit their:

- Cover letter detailing research interests and alignment with the position.
- Curriculum Vitae (CV) including a full list of publications.
- Contact details for two referees.
- Copies of PhD certificate and relevant academic transcripts.

 Please send further inquiries and submission of applications, to Dr Pfananani Ramulifho (eramulpa@unisa.ac.za)

Application Deadline: **02 April 2025**



University of South Africa
Department of Environmental Sciences
Florida Science Campus

Post-doctoral Fellow Position

Position Overview:

The Department of Environmental Sciences at the University of South Africa (UNISA) – Florida Science Campus invites applications for a Postdoctoral Fellowship focusing on biomonitoring, environmental DNA (eDNA), water quality monitoring, and surface-groundwater interactions.

This position supports ongoing and upcoming research aimed at advancing biological monitoring techniques to assess aquatic ecosystem health, groundwater quality, the impacts of anthropogenic activities on freshwater resources, as well as the interactions between surface water and groundwater systems. The project will integrate traditional biomonitoring methods, eDNA analysis, and hydrogeochemical assessments to provide comprehensive water quality evaluation frameworks for diverse aquatic environments in Southern Africa.

The successful candidate will work in a multidisciplinary research environment, collaborating with experts in hydrology, aquatic ecology, molecular biology, and water resource management. The position also offers opportunities to publish in high-impact journals, mentor postgraduate students, and contribute to policy-relevant research.

Key Responsibilities:

- Conduct independent research on biomonitoring, eDNA-based assessments, and groundwater monitoring.
- Develop and apply molecular techniques (eDNA metabarcoding) for aquatic biodiversity monitoring.
- Assess water quality trends using physicochemical, microbiological, and molecular approaches.
- Develop and validate biological indices and hydrogeochemical models for water quality assessment.
- Integrate and analyse diverse datasets (water quality, climate, land use) for spatial and statistical analysis.
- Apply data analytics and machine learning techniques to analyse environmental changes over time.
- Mentor and collaborate with postgraduate students
- Publish research findings in high-impact peer-reviewed journals and present at scientific conferences.



- Collaborate and participate in research development through proposal writing for grant applications and other fundraising activities.
- By the end of the fellowship, the candidate is expected to have published a minimum of six peer-reviewed articles (2/year) and contributed to collaborative grant submissions.

Minimum Requirements:

- PhD in Environmental Science, Aquatic Ecology, or a closely related field.
- The candidate should not have served as a postdoc elsewhere, nor be currently serving as one.
- Expertise in biomonitoring methodologies, including macroinvertebrate, fish, or algal indices.
- Strong record of primary contributions to peer-reviewed publications.
- Experience in handling large-scale environmental datasets and applying machine learning or predictive models for time-series data analysis.
- Proficiency in statistical analysis (R, Python, or MATLAB) for ecological and hydrological data.
- Knowledge of GIS and remote sensing tools for water quality assessments.
- Ability to disseminate project findings effectively to scientific and non-scientific audiences.
- Proven ability to work collaboratively in a multidisciplinary research environment.


Additional Information:

- The Postdoctoral fellowship is based at the Florida Science campus of the University of South Africa
- Duration: 3-year contract (renewable every year based on performance and funding)
- Preferred Start Date: 1st of June 2025
- The university offers competitive remuneration aligned with institutional guidelines

Application Details:

Interested candidates should submit their:

- Cover letter detailing research interests and alignment with the position.
- Curriculum Vitae (CV) including a full list of publications.
- Contact details for two referees.
- Copies of PhD certificate and relevant academic transcripts.

 Please send your applications (or enquiries) to Dr Malebo Matlala (matlamd1@unisa.ac.za)

Application Deadline: **02 April 2025**



