



science & innovation

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Science and Innovation
REPUBLIC OF SOUTH AFRICA

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UFS
NATURAL AND
AGRICULTURAL SCIENCES



MANDELA MINING PRECINCT
MINDS FOR MINES

MSc Research Fellowships at the SAMERDI Research Centre for Advanced Orebody Knowledge (SRC for AOK), Geology Department, University of the Free State

Through the facilitation of the Mandela Mining Precinct (MMP) and with funding from the South African Department of Science and Innovation, the SRC for AOK was established in the Department of Geology of the University of the Free State (UFS), with Prof John Carranza as its Research Competence Leader.

The SRC for AOK, which supports the South African Mining Extraction Research, Development & Innovation (SAMERDI) Strategy, aims to create the ultimate 'Glass Rock' environment which includes improving geological confidence ahead of the face, reduction or identification of risks associated with geology and ultimately to have timeous information.

The SRC for AOK at the UFS will engage in the following quantitative research topics (and their corresponding potential supervisors¹):

- Geostatistical simulation of orebodies (Prof J Carranza);
- Mineralogical and geochemical constraints in orebody modelling (Prof F Roelofse, Dr M Clark, Dr J Keet);
- Hyperspectral and geochemical data fusion for predictive drill core mineral mapping (Prof J Carranza, Dr M Clark).

In view of the above, **we invite applications for full-time MSc research fellowships in the SRC for AOK**. Successful applicants are expected to have the following minimum requirements:

- A degree in Geology or in a relevant discipline at NQF²-level 8;
- Graduated from a historically disadvantaged educational institute (HDEI) in South Africa;
- Competence in mathematics and/or physics; and
- Proficiency in 2D/3D GIS spatial data analysis and modelling.

¹ Research profiles of Prof J Carranza, Prof F Roelofse, Dr M Clark, Dr J Keet can be found at <https://www.ufs.ac.za/natagri/departments-and-divisions/geology-home/general/staff>

² National Qualification Framework (see South Africa Qualifications Authority, <https://www.saqa.org.za/>)





Proficiency in programming skills is a plus but not required. Successful applicants without programming skills are required to develop them over the course of their involvement in the project.

Successful applicants will be supported under the SRC for AOK at the UFS according to the guidelines of NSFAS³. Therefore, the following order of priority will be applied in the selection process:

1. Historically disadvantaged South African female
2. Historically disadvantaged South African male
3. South African citizen
4. Non-South African from Africa
5. Non-South African from outside of Africa

The amount of funding support for the MSc students under the SRC for AOK at the UFS will be according to NRF⁴.

For enquiries, please contact Prof Carranza (carranzaejm@ufs.ac.za).

To apply, please email the following documentation by 30 April 2024 to Prof Carranza:

- 1-page motivation letter, indicating expertise and experience relevant to one or more of the above-mentioned research topics;
- Full CV, indicating how the minimum requirements are satisfied;
- Full transcripts of academic records and copy of degree certificate(s);
- Copy of ID document (or copy of passport in the case of foreign applicants); and
- Contact details of two academic referees who have taught/supervised the applicant.

Successful applicants are expected to study full-time and to commence immediately signing of bursary agreement.

³ National Student Financial Aid Scheme, <http://www.nsfas.org.za/>

⁴ National Research Foundation, <https://www.nrf.ac.za/>

