



Name: LINDANI NCUBE

Highest qualification: PhD. Geology, University of Fort Hare, South Africa

Current employer & Appointment/title: Lecturer, University of South Africa (UNISA)

Mentor or mentee: Mrs Helena Johanna van Niekerk and Professor Baojin Zhao

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Country: South Africa

Area of Research/Teaching

U-Pb-Th geochronology and evolution of drainage basin systems

Biography

I am a geologist who holds a PhD in geology. My professional background encompasses:

Geochemistry; geochemical sampling, isotopic geochemistry (detrital zircon U-Pb-Th geochronology, Nd, Sr), whole rock geochemistry, mineral geochemistry, mineralogy and petrography, provenance of rocks and sediments, geochemical dispersion models, geochemical modeling of low and high temperature processes, exploration geochemistry and interpretation of litho-geochemistry.

Geology; geological field mapping, core logging, sediments sampling, implementation of logging standards and sampling protocols, interpretation of sedimentological data, basin development and mineral deposits, weathering of continental platforms, structure analysis of surface and subsurface structural data, building of geological block models and statistical block modeling.

Grants Received

Rockefeller Foundation Research grant, 2002-2003

Emrosa SA (Pty) bursary, University of Fort Hare, 2006-2008

NRF bursary for PhD study, University of Fort Hare, 2011

Govan Mbeki Research and Development Centre bursary for PhD study, University of Fort Hare, 2013

Geological Society of South Africa research grant, South Africa, 2011

National Natural Science Foundation of China (NSFC)/National Research Foundation of South Africa (NRF) research grant, China-South Africa, 2018

National Research Foundation of South Africa’s Innovative Post-Doctoral Fellowship, South Africa, 2018

African Institute For Mathematical Sciences

Research Project outline

My Research research seeks to establish sedimentary accumulation rate and provenance variation records since the Pliocene from the IODP drilling cores surrounding the Southern African continent to capture significant river evolution events. Furthermore, provenance and geomorphology studies will be applied in the drainage areas of the Limpopo and the Zambezi Rivers to aid in interpreting the marine records. Finally, Southern African river evolution history and the Pliocene-Pleistocene climate change records to explore the effects of climate changes on fluvial erosion, and drainage areas adjustment will be studied. The results obtained will improve the understanding of the ability of climatic changes to control fluvial erosion. The research, is multiple-inter-trans-disciplinary encompassing landscape evolution, holistic earth systems science approach and climate. There is scanty information on the influence of Pliocene-Pleistocene climatic changes on the evolution of rivers in Southern Africa. Therefore, the research will scientifically contribute to the scientific knowledge of climatic change cycles and the development of river systems in Southern Africa and the evolution of aridity. More so, young scientist from historically disadvantaged background in South Africa and other African countries (2 PhD and 2 MSc candidates) have been awarded an opportunity to engage and exchange scientific knowledge through workshops, trainings and conferences. This helps in the advancement of basic research procedures, processes and knowledge. Therefore, ensuring a meaningful capacity development in Africa. More so, the research will develop a model that will be use to predict aridification of water systems, so as to prevent droughts and hunger amongst people and animals.

**Lindani Ncube,
Lecturer,
University of South Africa,
South Africa**

**Educational: PhD (Geology)
Research:**

