Nelson Mandela Metropolitan University

for tomorrow

<u>Study opportunity</u>: MSc research project at the Coastal and Marine Research Institute, Nelson Mandela Metropolitan University

We invite applications from previously disadvantaged South African citizens for the below full-time study opportunities at the Coastal and Marine Research Institute, a rapidly developing and dynamic centre of excellence in marine zoological and environmental research, encompassing fields from oceanography to top predator ecology and ecosystem modelling.

<u>Project title</u>: Three-dimensional foraging performance of African Penguins under varying prey fields

Supervisor: Dr Lorien Pichegru (NMMU), Dr Alistair McInnes (NMMU), Dr Pierre Pistorius (NMMU)

PROJECT OUTLINE

Recent advances in technology allow exploring previously unseen underwater behaviours of marine top predators, such as diving behaviour and prey capture rate, which allows accurate estimation of energy use of wild animals. African Penguin population has decreased by 70% in the last 10 years with Algoa Bay now hosting half of the global population. Understanding the actual energy that penguins use under different habitat conditions and they respond to changes to prey availability, is crucial, particularly in the context of rapid environmental changes. The project will use a unique combination of dataset, including acoustic surveys of small-scale pelagic fish availability and penguin-borne miniature video cameras to explore the functional relationships between an endangered marine top predator, the African Penguin, and their prey.

The proposed MSc will use state of the art animal-borne technology including GPS, accelerometers and miniature video cameras to map the 3D movements and associated behaviours of foraging African Penguins. Variation in penguin movement and behaviour will then be compared to different acoustically determined prey fields recorded from acoustic fish surveys conducted concurrently with the penguin deployments.

APPLICATIONS AND FUNDING

Candidates should have an appropriate BSc Honours/MSc degree with excellent records. The candidate should be willing to work long hours in isolated conditions and should be willing to work with complex data processing and modelling techniques in R. Hence, experience in statistical data analysis and writing skills would be favoured to ensure an efficient start. The candidate should preferably have some field experience involving data collection and management. The successful candidate will form part of a research team.

The value of the scholarship is R90 000 per year for up to two years and may apply for an additional NMMU Postgraduate Research Bursary. Renewal each year will be contingent on satisfactory academic progress.

To apply, please send a CV (including academic records & names and contact details of three referees) and a short motivation letter to Dr Lorien Pichegru (lorien.pichegru@nmmu.ac.za).

Closing date: ***28th February 2017***