DEPARTMENT OF BIOLOGICAL SCIENCES MASTER OF SCIENCE POSITION FOR 2026
UNIVERSITY OF CAPE TOWN

Description of project:

A research team from the Department of Biological Sciences at the University of Cape Town and the Department of Forestry, Fisheries, and the Environment (DFFE) is looking for a Master of Science (M.Sc.) student to characterize the larval growth, development and settlement stages of the Cape sea urchin *Parechinus angulosus* under aquaculture conditions. This species has recently been identified as having potential for aquaculture production in South Africa as they produce high quality gonads ('uni').

The DFFE/UCT Aquaculture Research Group have been developing technologies for the farming of *Tripneustes gratilla* (a warm water species) for more than a decade, and the first pilot commercial scale integrated urchin-seaweed trial was recently successfully conducted. Even though this species has high commercial potential, it is poorly suited for farming in the Western Cape as it needs to be cultivated in warmer water (ca. 25°C). In contrast, the Cape sea urchin is compatible with Western Cape seawater temperatures (ca. 16°C) and can easily be integrated on existing abalone farms. This M.Sc. project presents an exciting opportunity to develop technologies for Cape sea urchin larval rearing and settlement, both critical parts of sea urchin production/aquaculture. Drawing from previous work done on *T. gratilla*, this study will include Cape sea urchin broodstock conditioning and spawning, characterizing larval development and growth rates, optimizing larval feeds and feeding regimes, and assessing suitable settlement substrates when larvae switch from their free-swimming planktonic phase to the benthic phase of their life cycle.

This study will be conducted at the DFFE Marine Aquaculture Research Facility in Sea Point (Cape Town) and will contribute towards a key component needed for the development of a new aquaculture species. The M.Sc. student will work as part of a diverse research team from South Africa and France, collaborating with members of the international joint laboratory LIMAQUA (https://en.ird.fr/project-limaqua-african-interdisciplinary-laboratory-sustainable-nutrition-sensitive-marine) and the AfriMAQUA Network (https://afrimaqua.cnrs.fr), which is a network of researchers developing sustainable marine aquaculture across Africa with a nutrition sensitive approach.

Funding for running costs will be provided by the DFFE, NRF and IRD. Applicants are encouraged to independently source funding for a bursary (with assistance from the research team), though there is potential for a bursary through the LIMAQUA International Joint Laboratory.

Type: M.Sc., Research

Requirements:

- B.Sc. honours degree in a related discipline (e.g., aquaculture, marine biology, biological sciences, zoology, botany).
- Registration at the University of Cape Town, Department of Biological Sciences.

How to Apply: Applicants should submit: (i) an application letter no longer than 2 pages that includes a description of research interests and expertise; (ii) a CV; (iii) copies of academic transcripts and/or certificates; (iv) an example of written work (e.g., Honours thesis).

Contact details for submission of applications: MHull@environment.gov.za; john.bolton@uct.ac.za; BMacey@dffe.gov.za