



Biological  
Sciences

## Department of Biological Sciences

University of Cape Town

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Tel: +27 (0) 21 650 3604 Fax: +27 (0) 21 650 3301  
<http://www.biologicalsciences.uct.ac.za/>



### DEPARTMENT OF BIOLOGICAL SCIENCES/ ASTRAL POSTDOCTORAL RESEARCH FELLOWSHIP 2020 – UNIVERSITY OF CAPE TOWN

Applications now open for the **Department of Biological Sciences/ ASTRAL [All Atlantic Ocean Sustainable, Profitable and Resilient Aquaculture] Postdoctoral Research Fellowship**

**Application Deadline:** 30<sup>th</sup> September 2020 or until position is filled

**About the Award:** A research team from the Department of Biological Sciences at the University of Cape Town and the Department of Environment, Forestry and Fisheries (DEFF) is seeking a Postdoctoral Research Fellow (PDRF) to join a European Union funded project (ASTRAL) to develop new, sustainable, profitable and resilient value chains for integrated multi-trophic aquaculture (IMTA) production within the framework of existing, emerging and potential Atlantic markets. The PDRF will be motivated to work as part of a diverse research team from South Africa, Brazil and Europe, engage with a variety of aquaculture stakeholders and decision-makers, and generate peer-reviewed publications.

#### Project research will address the following objectives:

- (1) Monitor the physical and chemical parameters of the abalone-Ulva IMTA systems, including the microbial community to provide critical information on biosecurity, species health and system health;
- (2) Investigate the potential for the use of faecal matter from the sea urchin *Parechinus angulosus* as a feed/probiotic for juvenile abalone;
- (3) Assist with mapping the diversity, occurrence and current monitoring methods of different pathogens (bacteria and virus) for a variety of aquaculture systems and species (IMTA/monoculture; open/closed; fish/bivalves) through an extensive literature research and the inclusion of data from the above mentioned South African abalone-Ulva systems;
- (4) Contribute towards the characterization of the occurrence, levels, size range and polymeric composition of micron-sized plastic fragments generated in the IMTA systems in South Africa.
- (5) Contribute to the various Work Packages of ASTRAL as an integral member of the UCT/DEFF partner.

In ASTRAL, four IMTA labs or case studies (in South Africa, Brazil, Scotland & Ireland) and one prospective IMTA lab (Argentina) have been identified along the Atlantic shoreline, consisting of open-water, recirculating inshore and flow-through inshore IMTA systems focused on marine species. The labs form the heart of the ASTRAL project, providing the context for developing cost-effective, profitable and sustainable IMTA production. The overall aim of the ASTRAL labs is to (1) assess existing and potential IMTA in recirculation; flow-through and open systems, offshore and onshore, with an emphasis on improving production methods to reach optimal production regimes, taking in to account the range of species co-existing in each production system; (2) design new IMTA processes in each region with emphasis on regional challenges; (3) validate the symbiotic production relationships of IMTA and identify the benefits throughout the production cycles, assessing cost-effectiveness; and (4) develop and share knowledge on production methods, welfare criteria, health management, biosecurity, micro-plastics, and microbiome towards IMTA best practices.



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The PDRF will be advised by Dr Brett Macey at the Department of Environment, Forestry and Fisheries (DEFF) and Emeritus Professor John Bolton at the Department of Biological Sciences (UCT) in South Africa and will join an international team from ASTRAL including researchers from European countries (Portugal – AIR, Norway - NORCE, Spain - LEITAT, France – EGM, PMBA and BIO, UK - SAMS, Ireland – MI & CROWD), South American countries (Brazil – FURG and M&O and Argentina – CONICET) and African countries (South Africa – DEFF, CSIR and UCT, Nigeria - NIOMR). ASTRAL addresses local, regional and basin-wide drivers and factors to understand, predict and adapt to change, adopting an Atlantic basin cooperation involving North and South and bringing together and connecting scientists, stakeholders, consumers, data, knowledge, expertise and resources.

The PDRF will be based at UCT. UCT promotes a diverse and inclusive work community and excellent candidates are encouraged to apply.

The PDRF will be given the necessary resources for their work: office space, IT and communication infrastructure at University of Cape Town and/or DEFF Marine Research Aquarium. Remote working is allowed.

**Type:** Postdoc, Research

### Eligibility:

#### *Required*

- A PhD, awarded within the previous five years, in a related discipline (e.g. aquaculture, biological sciences, microbiology, genetics).
- Demonstrated ability to produce peer-reviewed research articles in international journals.
- Excellent written and verbal communication skills in English, proven in publications.
- Desire and ability to work in and coordinate an international and interdisciplinary team.
- Experience in working with abalone and sea urchins, including handling and care of all life stages, general husbandry, water quality monitoring and management, animal welfare.
- Experience in the collection, processing and analysis of next generation sequencing (microbiome) data.

### Selection process:

- Only eligible and complete applications will be considered for selection.
- Interviews will take place during mid-October 2020 and the successful candidate is expected to start as soon as possible thereafter.

**To be taken at (Country):** South Africa

### Value & Duration of Award:

- The postdoctoral bursary in line with UCT policies value (approximately ZAR 380,000 per year), with extension for a second year dependent on performance and funding.
- Application for tax exemption of the fellowship stipend will be made by the University.



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### Conditions of award:

- Applicants may not previously have held a full-time permanent academic post.
- The successful applicant will be required to register as a Postdoctoral Fellow at the University of Cape Town and will be expected to commence the required research at a mutually agreed date that is ideally no later than end of October 2020.
- The successful candidate will be expected to conduct part of the research at the DEFF Marine Research Aquarium in Sea Point (weekly travel to this facility) and will also be expected to travel to the IMTA lab, Buffeljags Abalone Farm (<http://www.vikingaquaculture.co.za/abalone/farming/>), Cape South Coast, at least monthly. As such, the successful candidate must be in the possession of valid Code B South African driver's licence.
- The successful applicant will be required to comply with the university's approved policies, procedures and practices for the postdoctoral sector.

**How to Apply:** Applicants should submit: (i) an application letter no longer than 2 pages that includes a description of research interests, research expertise, and suggestion for how they can work towards one or more of the broad project objectives outlined above; (ii) a CV including a publication list; (iii) copies of academic transcripts and/or certificates; (iv) an example of written work; (v) email addresses of two referees who have been directly involved in their PhD and/or previous postdoctoral research.

Contact details for submission of applications: [BrettM@daff.gov.za](mailto:BrettM@daff.gov.za) / [john.bolton@uct.ac.za](mailto:john.bolton@uct.ac.za)