POSITION DESCRIPTION

Postdoctoral Fellow
Physical Oceanographer- Regional Ocean Modeller

Position Level	Level A/B
Faculty/Division	Science
Position Number	00203946
Original document creation	1/10/ 2024

Position Summary

The Coastal and Regional Oceanography group is a dynamic team of researchers, including academics, postdocs, technical staff, and PhD students conducting research focussed on the dynamics of the East Australian Current System and the shelf circulation along the coast of southeastern Australia. The team are based in the School of Biological Earth and Environmental Sciences with close collaborations with the School of Maths and Statistics. UNSW has notable strengths in Oceanography, Marine Science, Geophysical Fluid Dynamics, Data Science, and Statistical Analysis and Methods and is consistently ranked in the top 25 universities in the world for Oceanography (ARWU). The primary research goal of the Coastal and Regional Oceanography group is to make a major contribution to understanding and predicting our coastal oceans and their interaction with the mesoscale boundary currents.

The group leads the South East Australian Coastal Ocean Forecast System (SEA-COFS) a suite of numerical models configured for the East Australian Current System. Additionally, the group uses modern observations (e.g., moorings, gliders, HF Radar, crowd sourcing ocean data from Fishing Vessels) and satellite remote sensing to explain fundamental ocean dynamics, and to gain a quantitative understanding of their impacts on coastal ocean bio-geo-chemical processes. The group has expertise in the Regional Ocean Modelling System (ROMS) and 4DVar data assimilation, with strong links to national and international collaborators.

The group is a dynamic team of researchers, including academics, postdocs, data scientists, technical staff, and PhD students conducting research focussed on the dynamics of the East Australian Current System and the continental shelf circulation along the coast of southeastern Australia. The group collaborate locally with state agencies on applied aspects of bio-physical oceanography. The group are a lead organisation in Australia's Integrated Marine Observing System (www.imos.org.au), responsible for the ongoing operation of the ocean-observing programme along southeastern Australia.

The Postdoctoral Fellow: Physical Oceanographer- Regional Ocean Modeller (Level A/B) involves research into the dynamics and prediction of the East Australian Current as part of a project funded by the NSW state government. The position will interact closely with coastal modellers, Postdocs, software engineers, data scientists and PhD students as well as external collaborators involved in understanding the dynamics of the EAC System.

The role reports to Prof. Moninya Roughan and has no direct reports. It is expected that the appointee will engage and collaborate with other team members. While the role does not involve any supervisory responsibilities, the possibility exists to be involved in the co-supervision of PhD students.

Accountabilities

Specific accountabilities for this role include:

Level A accountabiities:

- Engage in collaborative research consistent with disciplinary practice and create scholarly impact

- Contribute to scientific publications and undertake dynamical and quantitative data analysis as required to communicate project outcomes.

- Participate in and/or present at relevant conferences and/or workshops to communicate project outcomes as required and communicate with industry partners and stake holders.

- Contribute to the development of project planning documents, research proposals, budgets, and regular reporting.

- Provide technical research support and guidance to students, colleagues and collaborators working with regional ocean modelling systems.

- Align with and actively demonstrate the UNSW Values in Action: Our Behaviours and the UNSW Code of Conduct.

- Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that your actions or omissions do not impact on the health and safety of yourself or others.

Level B accountabilities (in addition);

- Conduct research activities under limited supervision and be an integral member of the modelling team.

- Develop numerical ocean models and perform model runs in a high-performance computing environment.

- Act in a lead role for publishing scientific publications and undertaking dynamical and quantitative data analysis as required.

Skills and Experience

Level A:

- PhD in Physical Oceanography.

- Strong track record in regional dynamical oceanography and knowledge of ocean dynamics.

- Demonstrated high level analytical and problem-solving skills with the ability to analyse large oceanographic datasets (from models and observations) and publication of results in quality journals.

- Experience with output from regional ocean modelling systems (e.g., ROMS, HYCOM, FVCOM) and related software

- Competent programming ability, including proficiency in C++/ Fortran, Linux, bash, git, Python / Matlab and NetCDF and experience working with high-performance computing environments and github.

- Strong scientific writing skills in English, as evidenced by publications in internationally recognised, high ranking, peer-reviewed journals.

- Ability to work in a team and independently, collaborate across disciplines and build effective relationships. Strong interpersonal skills with demonstrated ability to communicate and interact with a diverse range of stakeholders, project partners and students.

- Excellent organisation and influencing skills. An action oriented, supportive and positive attitude with a curious mind that encourages exploration. Attention to detail and an ability to prioritise tasks and manage projects in a timely fashion.

- An understanding of and commitment to UNSW's aims, objectives and values in action, together with relevant policies and guidelines.

- Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training

Level B (In addition):

- Demonstrated track record in research with outcomes of high quality and high impact with clear evidence of the desire and ability to achieve research excellence as well as the capacity for research leadership.

- Experience deploying regional ocean models in a high-performance computing environment and / or Cloud computing environment such as Amazon Web Services.

- Understanding of Data Assimilation techniques (preferably variational methods, e.g. 3D-Var/4D-Var) although experience in ensemble methods is also desirable.

- Proven commitment to proactively keeping up to date with discipline knowledge and developments.

Pre-employment checks required for this position

- Verification of qualifications

About this document

This Position Description outlines the objectives, desired outcomes, key responsibilities, accountabilities, required skills, experience and desired behaviours required to successfully perform the role.

This template is not intended to limit the scope or accountabilities of the position. Characteristics of the position may be altered in accordance with the changing requirements of the role.