

UTAS Postdoctoral Research Associate – Physical Oceanography

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| College/Division | College of Sciences and Engineering |
| School/Section | Institute for Marine and Antarctic Studies – Oceans and Cryosphere |
| Location | Hobart – Salamanca |
| Classification | Academic Level A/B |
| Reporting line | Reports to Associate Professor Helen Phillips |

Position Summary

The University of Tasmania (UTAS) is building a vision of a place-based University with a mission to enhance the intellectual, economic, social and cultural future of Tasmania, and from Tasmania, contribute to the world in areas of distinctive advantage. The University recognises that achieving this vision is dependent on the people we employ as well as creating a people-centred University that is values-based, relational, diverse, and development-focused.

This position is part of the ARC Australian Centre for Excellence in Antarctic Science (ACEAS), a national-scale, University-led, international centre focused on helping the world community prepare for climate risks emerging from East Antarctica and the Southern Ocean by integrating knowledge of the ocean, atmosphere, cryosphere and ecosystems, and their interplay. ACEAS will grow to support the activities of around 150 researchers, administrative staff, and students, with exciting opportunities to collaborate across disciplinary and institutional boundaries. Further information on ACEAS is available at <http://antarctic.org.au/>. The Postdoctoral fellow will join a vibrant team of oceanographers diagnosing small-scale ocean processes and their variability using novel methods applied to data from targeted field observations, global observing systems and high-resolution ocean models. Our work contributes to international efforts to investigate the momentum and energy balances of Southern Ocean currents that control the magnitude of the Southern Ocean overturning circulation and cross-frontal eddy fluxes of heat and freshwater.

This position will commence in January 2023. The successful candidate will contribute primarily to ACEAS Programs 1 and 3, and specifically to topics in Program 1.2. “Quantify the changes to, and understand the drivers of, ocean and atmospheric circulation across a range of timescales affecting the flow of heat and moisture to the eastern Antarctic system”. The postdoctoral fellow will quantify the fine scale vertical structure of velocity and water mass properties across the Southern Ocean from existing observations to examine the processes that flux heat, freshwater and other tracers across Southern Ocean fronts. This work will include analysis of high-resolution model simulations (e.g. MITgcm and ACCESS-OM2-01) to test their ability to represent these processes. The postdoctoral fellow will also contribute to the team’s efforts to scale up targeted field observations using global arrays to deliver full depth, daily circumpolar estimates of eddy tracer fluxes and increased understanding of their variability, with parallel analysis of model simulations. The successful candidate will participate in the ACEAS planned marine science voyage to the Denman Glacier (Feb/Mar 2025). The work of the Postdoctoral Fellow in years 1 and 2 of the project will contribute to guiding optimal field sampling on the Denman voyage in year 3 (ACEAS Program 3). The Postdoctoral Fellow will contribute to gathering new observations of velocity structure and watermass properties across the ACC, Antarctic Slope Front and within pathways of exchange between the open ocean and Antarctic continental shelf, and will contribute to integrating observations from the voyage with earlier findings to deliver new insight into the complex Southern Ocean circulation.

We are an inclusive workplace committed to ‘working from the strength that diversity brings’ reflected in our Statement of Values. We are dedicated to attracting, retaining and developing our people and are committed to inclusive principles. We celebrate the range of diverse assets that gender identity,



ethnicity, sexual orientation, disability, age and life course bring. Applications are encouraged from all sectors of the community. Tell us how we can make this job work for you.

What You'll Do

- Make an effective and sustained contribution to the University in achieving its strategic objectives and fulfilling its operational responsibilities.
- Undertake innovative research using observations and high-resolution simulations to investigate the processes that drive cross-frontal fluxes of heat, freshwater and other tracers, and influence the magnitude of the Southern Ocean overturning circulation.
- Prepare for and participate in the Denman marine science voyage for sampling of open-ocean to coastal exchanges of heat and freshwater and investigation of related physical processes.
- Contribute to the development of innovative concepts and ideas for further research.
- Maintain a strong focus on communicating research findings by publishing in highly ranked journals and presenting to peers at local, national and global conferences and seminars.
- Contribute to the communication of research findings to research users and the broader community.
- Work collaboratively in an interdisciplinary research team to achieve collective as well as individual outcomes.
- Take on leadership opportunities that arise and contribute to the collegiate life of ACEAS/IMAS such as contributing to Honours and PhD supervision, committee membership, leading workshops, etc.
- Undertake other duties as assigned by the supervisor.

What We're Looking For (success criteria)

- A PhD in Physical Oceanography or an equivalent field.
- Knowledge of atmosphere/ocean dynamics and climate processes and postdoctoral experience commensurate with the level of appointment, as demonstrated by a record of quality publications.
- High level quantitative skills, as demonstrated through analysis and interpretation of complex ocean/atmosphere datasets or numerical simulations.
- Experience in Southern Ocean research with particular emphasis on ocean circulation and frontal dynamics of the Antarctic Circumpolar Current and/or Antarctic coastal current system.
- A good record of, and continuing commitment to, research that attracts international recognition in the fields of Antarctic and Southern Ocean oceanography and climate science.
- Demonstrated ability to work efficiently with minimal supervision, with a capacity to set and prioritize strategic research directions, and to design and complete collaborative research programs to achieve scientific goals and funding milestones.
- Demonstrated ability to work collaboratively in a research team covering multiple disciplines to achieve collective as well as individual outcomes.

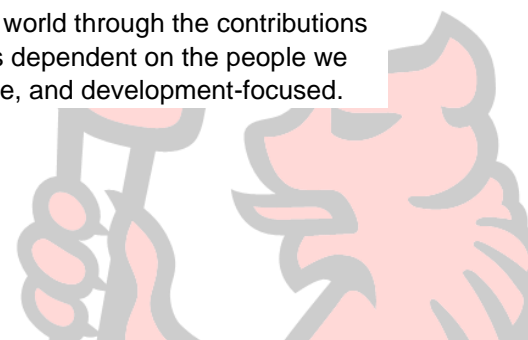
Other desirable criteria

- Seagoing experience in physical oceanographic data collection on research voyages.
- Interest in communicating results to a variety of audiences and stakeholders beyond research institutions.

University of Tasmania

The University of Tasmania is an institution with an enduring commitment to our state and community, and a strong global outlook. We are committed to enhancing the intellectual, economic, social and cultural future of Tasmania. Our [Strategic Direction](#) strongly reflects the University community's voice that our University must be place based but globally connected as well as regionally networked and designed to deliver quality access to higher education for the whole State.

We believe that from our unique position here in Tasmania we can impact the world through the contributions of our staff, students and graduates. We recognise that achieving this vision is dependent on the people we employ, as well as creating a university that is values-based, relational, diverse, and development-focused.



Check out more here: <https://www.utas.edu.au/jobs>

The intention of this position description is to highlight the most important aspects, rather than to limit the scope or accountabilities of this role. Duties above may be altered in accordance with the changing requirements of the position.

