

VERONICA TAMSITT
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EDUCATION

- Ph.D. Oceanography, Scripps Institution of Oceanography, UC San Diego, 2018
Thesis: *Aspects of the three-dimensionality of the Southern Ocean Overturning Circulation*
- B.Sc. Oceanography with Honors, University of Washington, 2012
Thesis: *Nitrous Oxide in the eastern tropical North Pacific*

PROFESSIONAL EXPERIENCE

- Scientific Researcher, Williams Lab, College of Marine Science, University of South Florida, 2021–present
- Postdoctoral Research Associate, University of New South Wales and Centre for Southern Hemisphere Oceans Research, CSIRO Oceans and Atmosphere, 2018 – 2021
- Graduate Student Researcher, Scripps Institution of Oceanography, 2012 – 2018
Advisor: Dr Lynne Talley
- Undergraduate Researcher, Stable Isotope lab, University of Washington, Department of Oceanography, 2010 – 2012
Advisor: Dr Paul Quay

SKILLS

Software: Python (NumPy, SciPy, Pandas, Xarray, matplotlib, Mayavi), MATLAB, Git
Research: Quantitative Analysis, Data Visualization, Climate modelling and analysis, Statistics, High Performance Computing

PEER-REVIEWED PUBLICATIONS

13. **Tamsitt, V.**, S. Bushinsky, Z. Li, M. du Plessis, A. Foppert, S. Gille, S.R. Rintoul, E. Shadwick, A. Silvano, A. Sutton, S. Swart, B Tilbrook, N.L. Williams (2021). The Southern Ocean [in “State of the Climate in 2020”], *Bull. Amer. Meteor. Soc.*, *in press*
12. Bach, L., **V. Tamsitt**, J. Gower, C. L. Hurd, J. A. Raven, P. W. Boyd (2021). Testing climate intervention with ocean afforestation using the Great Atlantic Sargassum Belt. *Nature Communications*, *in press*
11. Wei, Y., S. T. Gille, M. R. Mazloff, **V. Tamsitt**, S. Swart, D. Chen, L. Newman (2020). Optimizing Mooring Placement to Constrain Southern Ocean Air–Sea Fluxes. *Journal of Atmospheric and Oceanic Technology*, 37(8), 1365-1385.
10. **Tamsitt, V.**, I. Cerovečki, S. Josey, S. Gille, and E. Schulz (2020). A comparison of mooring air-sea heat flux and mixed layers in the Southeast Indian and Southeast Pacific Subantarctic Mode Water formation regions, *Journal of Climate*, 33(7), 2757-2777.
9. Meijers, A., I. Cerovečki, B. A. King, and **V. Tamsitt** (2019). A see-saw in Pacific Subantarctic

Mode Water formation driven by atmospheric modes, *Geophysical Research Letters*, 46(22), 13152-13160.

8. Swart, S., S. T. Gille, B. Delille, S. Josey, M. Mazloff, L. Newman, A. F. Thompson, J. Thomson, B. Ward, M.D. Du Plessis, E.C. Kent, J. Girton, L. Gregor, P. Hyder, L. Ponzi Pezzi, R. Buss De Souza, **V. Tamsitt**, R.A. Weller, C.J. Zappa (2019). Constraining Southern Ocean air-sea-ice fluxes through enhanced observations, *Frontiers in Marine Science*, 6, 421.
7. **Tamsitt, V.**, M. R. Mazloff, and L. D. Talley, (2019). A Deep Eastern Boundary Current carrying Indian Deep Water south of Australia, *Journal of Geophysical Research: Oceans*, 124, 2218–2238.
6. Cerovečki, I., A. J. Meijers, M. R. Mazloff, S. T. Gille, **V. Tamsitt**, and P. R. Holland, (2019). The effects of enhanced sea ice export from the Ross Sea on recent cooling and freshening of the Southeast Pacific, *Journal of Climate*, 32, 2013–2035.
5. Ogle, S. E., **V. Tamsitt**, S. A. Josey, S. T. Gille, I. Cerovečki, L. D. Talley, and R. A. Weller, (2018). Episodic Southern Ocean heat loss and its mixed layer impacts revealed by the furthest south multi-year surface flux mooring, *Geophysical Research Letters*, 45, 5002–5010.
4. **Tamsitt, V.**, R. P. Abernathy, M. R. Mazloff, J. Wang, and L.D. Talley, (2018). Transformation of deep water masses along Lagrangian upwelling pathways in the Southern Ocean. *Journal of Geophysical Research: Oceans*, 123(3), 1994–2017.
3. **Tamsitt, V.**, H. Drake, A. K. Morrison, L. D. Talley, C. O. Dufour, A. R. Gray, S. M. Griffies, M. R. Mazloff, J. L. Sarmiento, J. Wang, and W. Weijer, (2017). Spiraling pathways of global deep waters to the surface of the Southern Ocean. *Nature Communications*, 8, 172.
(see my news article on this paper on the [SOCCOM project website](#), commentary in [MIT news](#), [Los Alamos National Laboratory news](#), and a feature on data visualization in [Science News magazine](#))
2. Albery, M.S., S. Billheimer, M. M. Hamann, C. Y. Ou, **V. Tamsitt**, A. J. Lucas, M. H., (2017). A reflecting, steepening, and breaking internal tide in a submarine canyon. *Journal of Geophysical Research: Oceans*, 122(8), 6872-6882.
1. **Tamsitt, V.**, L. D. Talley, M. R. Mazloff, and I. Cerovečki, (2016). Zonal variations in the Southern Ocean heat budget. *Journal of Climate*, 29(18), 6563-6579.

In review and in prep

Bharti, V., **V. Tamsitt**, H. Phillips, and N. Bindoff. The imprint of the Southern Ocean Polar Front on air-sea fluxes, *in review at Frontiers in Marine Science*

Tamsitt, V., M. H. England, S. Rintoul, and A. Morrison. Residence time of warm Circumpolar Deep Water on the Antarctic continental shelf, *in review at GRL*

Tamsitt, V., M. Ardyna, M. Bressac, A. Tagliabue, J. B. Sallee. Impact of hydrothermal vents on deep and surface biogeochemical cycles in the Southern Ocean, *in prep*

Bach, L., **V. Tamsitt**, K. Baldry, J. McGee, E. Laurenceau-Cornec, R. Strzepek, P. W. Boyd. Hot spots for climate intervention with iron fertilization in the Southern Ocean, *in prep*

Wang, K., **V. Tamsitt**, H. Phillips, and N. Bindoff. Observations of submesoscale upwelling of heat and nutrient rich Circumpolar Deep Water in the Polar Front, *in prep*

NON-REFEREED PUBLICATIONS

3. S. Groeskamp, C. de Lavergne, R. Holmes, **V. Tamsitt**, I. Frenger, C. C. Chapman, E. Newsom, G. J. Stanley (2019). Climate recorded in seawater: A workshop on water-mass transformation analysis for ocean and climate studies, *Bulletin of the American Meteorological Society*
2. **V. Tamsitt** (2018). Moving Windows to the Deep Ocean. *Nature Climate Change*, 8(11), 941-942
1. S. Gille, I Cerovečki, M. Mazloff, and **V. Tamsitt** (2015). Estimating Southern Ocean air-sea fluxes from models and observations. *US CLIVAR Variations*, 13(4)

INVITED PRESENTATIONS

- V. Tamsitt**, 2020. *The three-dimensional Southern Ocean Circulation*, Keynote Oral Presentation, ‘Gateways to the Ocean’ Symposium, Scripps Institution of Oceanography, La Jolla, USA
- V. Tamsitt**, 2019. *Lessons on comparing modelled Lagrangian and WMT perspectives on ocean circulation: a Southern Ocean upwelling experiment*, Oral Presentation, Water Mass Transformation Workshop, Sydney, Australia
- V. Tamsitt**, I. Cerovečki, S. Josey, S. Gille and E. Schulz, 2019. *A comparison of mooring air-sea heat flux and mixed layers in two key Subantarctic Mode Water formation regions*, Oral Presentation, Qingdao Ocean Science and Technology National Laboratory Annual Meeting, Qingdao, China
- V. Tamsitt**, 2018. *Aspects of the three-dimensionality of the Southern Ocean circulation*, CSIRO Oceans and Atmosphere Seminar, Hobart, Australia
- V. Tamsitt**, L. D. Talley, I. Cerovečki, and M. R. Mazloff, 2016. *Zonal variations in the Antarctic Circumpolar heat budget*, Invited Poster Presentation, Ocean Sciences Meeting, New Orleans, USA
- V. Tamsitt**, L. D. Talley, I. Cerovečki, and M. R. Mazloff, 2015. *Southern Ocean State Estimate air-sea heat fluxes and the ACC heat budget*, Oral Presentation, SOOS/WCRP/ESA Air-sea flux Workshop, Frascati, Italy

SELECTED CONFERENCE AND WORKSHOP PRESENTATIONS

- V. Tamsitt**, M. England, and S. Rintoul, 2020. *Residence time of warm Circumpolar Deep Water on the Antarctic continental shelf*, Oral Presentation, Ocean Sciences Meeting, San Diego, USA
- V. Tamsitt**, M. England, and S. Rintoul, 2019. *Lagrangian connectivity and residence time of warm Circumpolar Deep Water on the Antarctic continental shelf*, Oral Presentation, AMOS-ICTMO Conference, Darwin, Australia
- V. Tamsitt**, I. Cerovečki, S. Josey, S. Gille and E. Schulz, 2018. *Comparison of variability in air-sea heat fluxes and Subantarctic Mode Water formation from concurrent mooring observations in*

the Southeast Indian and Southeast Pacific, Oral Presentation, AGU Fall meeting, Washington D.C., USA

- V. Tamsitt**, L. D. Talley, and M. R. Mazloff, 2018. *Structure and dynamics of an Indian Deep Eastern Boundary Current along the southern coast of Australia*, Oral Presentation, Ocean Sciences Meeting, Portland, USA
- S. Ogle, **V. Tamsitt**, S., Josey, S. Gille, I. Cerovečki, L. D. Talley, and R. Weller, 2018. *Extreme heat flux events and their impact on Subantarctic Mode Water formation revealed by the Southern Ocean OOI mooring*, Poster Presentation, Ocean Sciences Meeting, Portland, USA
- V. Tamsitt**, M. R. Mazloff, and L. D. Talley, 2018. *An Indian Deep Water pathway along the south coast of Australia*, Oral Presentation, AMOS-ICSHMO Meeting, Sydney, Australia
- V. Tamsitt**, 2017. *Pathways of upwelling deep waters to the surface of the Southern Ocean*, Oral Presentation, EGU Annual meeting, Vienna, Austria
- V. Tamsitt**, 2017. *Pathways of upwelling deep waters to the surface of the Southern Ocean*, Oral Presentation, NCAR Southern Ocean Workshop, Boulder, USA
- V. Tamsitt**, L. D. Talley, and M. R. Mazloff, 2017. *Connecting sources of circumpolar deep water to the Antarctic continental shelf using lagrangian pathways*, Oral Presentation, AGU Fall meeting, San Francisco, USA
- V. Tamsitt**, L. D. Talley, J. Wang, and M. R. Mazloff, 2016. *Lagrangian pathways of deep water upwelling in the Southern Ocean State Estimate*, Poster Presentation, Ocean Sciences Meeting, New Orleans, USA
- V. Tamsitt**, V., L. D., Talley, I. Cerovečki, and M. R. Mazloff, 2015. *Zonal variations in the Southern Ocean heat budget*, Oral Presentation, IUGG meeting, Prague, Czech Republic
- V. Tamsitt**, L. D. Talley, and M. R. Mazloff, 2014. *Heat gain in the Southern Ocean: Regional heat budgets using the Southern Ocean State Estimate*, Poster Presentation, Ocean Sciences Meeting, Honolulu, Hawaii

PROFESSIONAL SERVICE

Chair, National Education and Outreach Committee, Australian Meteorological and Oceanographic Society, 2019 – 2021

Seminar coordinator, CSIRO Oceans and Atmosphere seminar, Hobart, 2018 – 2020

Workshop co-organiser, Water Mass Transformation Workshop, University of New South Wales, Sydney, 2019

Student representative, Scripps Institution of Oceanography faculty hiring committee, 2016

Steering Leadership Committee member, Scripps Institution of Oceanography peer mentorship program, 2014 – 2016

Reviewer for *Nature*, *Nature Communications*, *Nature Climate Change*, *Science Advances*, *Geophysical Research Letters*, *Journal of Geophysical Research: Oceans*, and *Journal of Physical Oceanography*, 2017 – present

Professional Member, American Geophysical Union, 2013 – present

Professional Member, Australian Meteorological and Oceanographic Society, 2013 – present

TEACHING AND MENTORSHIP EXPERIENCE

Supervisor, PhD student UNSW, Hannah Dawson. Project: Antarctic shelf circulation and connectivity using Lagrangian particle tracking, 2020 – present

Supervisor, Bachelor of Marine and Antarctic Science (Physical Oceanography) Honours Project, Yinghuan Xie. Project: Localizing the Southern Ocean biogeochemical divide, 2020 – 2021

Supervisor, Bachelor of Marine and Antarctic Science (Physical Oceanography) Honours Project, Kai Wang. Project: Upwelling of Circumpolar Deep Water in a meander of the Antarctic Circumpolar Current, 2019 – 2020

Scientific trainer, CAPSTAN training voyage on the RV Investigator, 2019 – 2020

Supervisor, Undergraduate student research assistant, Sarah Ogle. Project: Southern Ocean air-sea heat flux from mooring observations, Scripps Institution of Oceanography (resulted in publication Ogle et al. 2018), 2016 – 2018

Instructor and Course Developer, UCSD Academic Connections, Washington D. C. program, a two-week intensive summer class on climate and ocean science and policy, 2015 – 2018

Chief Scientist, GOTO:SEE high school summer class educational cruise, R/V Sproul, San Diego Bay, 2016

Teaching Assistant, University of Washington, Introduction to Oceanography Lab, 2012

Teaching Assistant, University of Washington, Oceanography of the Pacific Northwest, 2011

OUTREACH AND COMMUNICATION

Participating Scientist, STEM Professionals in Schools program, Hobart College, 2018 – 2020

Contributing writer, Oceanbites.org blog (28 monthly blog posts), 2015 – 2018

Participating Scientist, NCSeteach Scientists in the Classroom program, Granite Hills High School, 2015 – 2018

Graduate student volunteer, Birch Aquarium at Scripps Beach Science program for middle school students, 2015 – 2018

Conference participant, ComSciCon San Diego conference for graduate students, 2016

Guest speaker on ‘Our Oceans in a Changing Climate’, St Pauls Cathedral San Diego Creation Care Sundays, 2016

Blogger, Southern Ocean Carbon and Climate Observations and Modeling (SOCCOM) Project, 2015 – 2016

Participant and aquarium hands on activity developer, Communicating Science to Informal Audiences graduate course at Scripps Institution of Oceanography, 2014

HONORS AND AWARDS

Selected to attend PODS - Physical Oceanography Dissertation Symposium (declined), 2018

U.S. Antarctic Service Medal, 2015

Graduate Student Excellence Travel/Research Award, Scripps Institution of Oceanography, 2013/2015

George Mitchell Fellowship for graduate study at Scripps Institution of Oceanography, 2012 – 2013

Scholar-Athlete award, University of Washington, 2012

Pac-12 Postgraduate Scholarship, 2012

FIELD WORK

Chief Scientist: CAPSTAN, RV Investigator, Fremantle, Western Australia to Hobart, Tasmania, March 2020 (voyage cancelled before departure due to COVID-19)

Instructor and CTD lead: CAPSTAN, RV Investigator, Hobart, Tasmania to Fremantle, Western Australia, Apr – May 2019, Chief Scientist: Leah Moore (Univ. of Canberra) (11 days)

Invited Scientist, Southern Ocean: *DEFLECT*, RV Investigator, Hobart, Tasmania, Oct – Nov 2018, Chief Scientist: Nathan Bindoff (UTAS) (31 days)

Chief Scientist, San Diego Bay: *GOTO:SEE*, RV Sproul, San Diego, California, July 2016 (2 days)

CTD samples, float deployments and mooring data QC, Southern Ocean: *OOI Southern Ocean II*. RV Palmer, Punta Arenas, Chile, Dec 2015 - Jan 2016, Chief Scientist: Sebastien Bigorre (WHOI) (30 days)

CTD watchstander, co-PI, Southern California coast: *LaJIT experiment*. RV Sproul, San Diego, California, Dec 2015, Chief Scientist: Matthew Alford (SIO) (3 days)

CTD watchstander and LADCP, South Pacific: *U.S. Repeat Hydrography section P16S*. RV Palmer, Hobart, Tasmania to Papeete, French Polynesia, Mar – May 2014, Chief scientist: Lynne Talley (48 days)

CTD watchstander and Nitrous Oxide analyst, Eastern tropical North Pacific: *Control of Denitrification and Anammox in Oxygen Minimum Zones (OMZs)*, RV Thompson, San Diego, California to Manzanillo, Mexico, April 2012 (10 days)