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## Research Interests

Observational oceanography, including: tropical air-sea interaction; submesoscale to mesoscale physics of the upper ocean; ocean salinity variability; satellite measurements; rain impacts on the ocean.

## Education

2005 to 2011      Ph.D. in Physical Oceanography, Scripps Institution of Oceanography.  
2004                B.Sc. in Physics, McGill University.

## Professional Experience

July 2014 to present      Oceanographer at Applied Physics Laboratory and Affiliate Assistant Professor at the UW School of Oceanography (since 2015).  
October 2012 to June 2014      Postdoctoral researcher, Scripps Institution of Oceanography (SIO). With Sarah Gille and Janet Sprintall.  
2011 to 2012            Postdoctoral researcher, Laboratoire d'Océanographie – Expérimentation et Approches Numériques (LOCEAN). With Eric Guilyardi, Jérôme Vialard, and Matthieu Lengaigne.  
2005 to 2011            Graduate Research Assistant, Scripps Institution of Oceanography. Dissertation: *Ocean dynamics and thermodynamics in the tropical Indo-Pacific region*. Advisors: Janet Sprintall and Sarah Gille.  
2009 to 2010            Fulbright scholar in Oceanography, Australian Commonwealth Scientific and Research Organisation (CSIRO). With Susan Wijffels.

## Publications

Reverdin, G., A. Supply, **K. Drushka**, E. J. Thompson, W. E. Asher, and A. Lourenço (2020). Intense and small freshwater pools from rainfall investigated during SPURS-2 on November 9 2017 in the eastern tropical Pacific. *J. Geophys. Res.*, accepted.

**Drushka, K.**, W. E. Asher, J. Sprintall, S. T. Gille, and C. Hoang (2019). Global patterns of submesoscale surface salinity variability *J. Phys. Oceanogr.*, 49(7), 1669–1685. DOI: 10.1175/JPO-D-19-0018.1.

**Drushka, K.**, W.E. Asher, A.T. Jessup, E.J. Thompson, S. Iyer, and D. Clark (2019). Capturing fresh layers with the surface salinity profiler. *Oceanography* 32(2):76-85, <https://doi.org/10.5670/oceanog.2019.215>.

Asher, W. E., **K. Drushka**, S. Iyer, A. T. Jessup, E. Thompson, and D. Clark (2019). Estimating Rain-Generated Turbulence at the Ocean Surface Using the Active Controlled-Flux Technique. *Oceanography*, 32(2) :108-115, <https://doi.org/10.5670/oceanog.2019.218>.

Rainville, L., L. R. Centurioni, W. E. Asher, C. A. Clayson, **K. Drushka**, J. B. Edson, B. A. Hodges, V. Hormann, J. T. Farrar, J. J. Schanze, and A. Y. Shcherbina (2019). Novel and Flexible Approach to Access the Open Ocean: Uses of

Sailing Research Vessel Lady Amber during SPURS-2. *Oceanography*, 32(2) :116-121, <https://doi.org/10.5670/oceanog.2019.219>.

- Rutledge, S.A., V. Chandrasekar, B. Fuchs, J. George, F. Junyent, B. Dolan, P.C. Kennedy, and **K. Drushka**. (2019). SEA-POL Goes to Sea. *Bull. Amer. Meteor. Soc.*, 100, 2285-2301, <https://doi.org/10.1175/BAMS-D-18-0233.1>.
- Thompson, E. J., W. E. Asher, A. T. Jessup, and **K. Drushka** (2019). High-resolution near-field rain maps from an X-band marine radar and their use in understanding ocean freshening. *Oceanography*, 32(2).
- Vinogradova, N., T. Lee, J. Boutin, **K. Drushka**, et al. (2019). Satellite Salinity Observing System: Recent Discoveries and the Way Forward. *Frontiers in Marine Science*, 6. <https://doi.org/10.3389/fmars.2019.00243>.
- Smith, S.R., Alory, G., Andersson, A., Asher, W., Baker, A., Berry, D.I., **Drushka, K.**, Figurskey, D., Freeman, E., Holthus, P. and Jickells, T. (2019). Ship-Based Contributions to Global Ocean, Weather, and Climate Observing Systems.
- Bellenger, H, **K. Drushka**, W.E. Asher, G. Reverdin, M. Katsumata, and M. Watanabe (2017). Extension of the prognostic model of sea surface temperature to rain-induced cool and fresh lenses. *J. Geophys. Res.* 121. doi:10.1002/2016JC012429.
- Drushka, K.**, W. E. Asher, B. Ward, and K. Walesby (2016). Understanding the formation and evolution of rain-formed fresh lenses at the ocean surface. *J. Geophys. Res.* 121. doi:10.1002/2015JC011527.
- Kelly, K A., **K. Drushka**, L. Thompson, D. Le Bars, and E. L. McDonagh (2016). Impact of slowdown of Atlantic overturning circulation on heat and freshwater transports. *Geophys. Res. Lett.* 43(14) 7625–7631.
- Boutin, J., Y. Chao, W. E. Asher, T. Delcroix, R. Drucker, **K. Drushka**, N. Kolodziejczyk et al. (2015). Satellite and in situ salinity: Understanding near-surface stratification and sub-footprint variability. *Bull. Amer. Meteorol. Soc.*
- Drushka, K.**, H. Bellenger, E. Guilyardi, M. Lengaigne J. Vialard, and G. Madec (2015). Processes driving intraseasonal displacements of the eastern edge of the warm pool: the contribution of westerly wind events. *Clim. Dyn.* doi:10.1007/s00382-014-2297-z.
- Keerthi, M. G., M. Lengaigne, **K. Drushka**, J. Vialard, C. de Boyer Montegut, S. Pous, M. Levy, and P. M. Muraleedharan (2015). Intraseasonal variability of mixed layer depth in the tropical Indian Ocean. *Clim. Dyn.* 1-23, doi:10.1007/s00382-015-2721-z.
- Drushka, K.**, S. T. Gille, and J. Sprintall (2014). The diurnal salinity cycle in the tropics. *J. Geophys. Res.* 119(9), 5875–5890. doi:10.1002/2014JC009924.
- Drushka, K.**, J. Sprintall, and S. T. Gille (2014). Subseasonal variations in salinity and barrier-layer thickness in the eastern equatorial Indian Ocean. *J. Geophys. Res.* 119, 805–823, doi:10.1002/2013JC009422.
- Nieblas, A-E, **K. Drushka**, G. Reygondeau, V. Rossi, H. Demarcq, L. Dubroca, and S. Bonhommeau (2014). Defining Mediterranean and Black Sea biogeochemical subprovinces and synthetic ocean indicators using mesoscale oceanographic features. *PLoS ONE* 9(10): e111251. doi:10.1371/journal.pone.0111251.
- Ghani, M.H., L. R. Hole, I. Fer, V. H. Kourafalou, N. Wienders, H. Kang, **K. Drushka**, D. Peddie (2014). The SailBuoy remotely-controlled unmanned vessel: Measurements of near surface temperature, salinity and oxygen concentration in the Northern Gulf of Mexico. *Meth. in Oceanogr.* doi:10.1016/j.mio.2014.08.001.
- Nieblas, A.E., H. Demarcq, **K. Drushka**, B. Sloyan, and S. Bonhommeau (2013). Front variability and surface ocean features of the presumed southern bluefin tuna spawning grounds in the tropical southeast Indian Ocean. *Deep-Sea Res. II.* 107, 64–76, doi:10.1016/j.dsr2.2013.11.007.

Vialard, J., **K. Drushka**, H. Bellenger, M. Lengaigne, S. Pous, and J.-P. Duvel (2013). Processes of Madden-Julian sea surface temperature signature in the North Western Australian Basin. *Clim. Dyn.* doi: 10.1007/s00382-012-1541-7.

**Drushka, K.**, S. Wijffels, J. Sprintall, and S. T. Gille (2012). In situ observations of Madden-Julian Oscillation mixed layer dynamics in the Indian and western Pacific Oceans. *J. Clim.* 25, 2306–2328.

**Drushka, K.**, J. Sprintall, S. T. Gille, and I. Brodjonegoro (2010). Vertical structure of Kelvin waves in the Indonesian Throughflow exit passages, *J. Phys. Oceanogr.*, 40(9), 1965–1987.

**Drushka, K.**, J. Sprintall, S. T. Gille, and W. S. Pranowo (2008). Observations of the 2004 and 2006 Indian Ocean tsunamis from a pressure gauge array in Indonesia, *J. Geophys. Res.*, 113, C07038.

## Professional Activities

Member of NASA's Physical Oceanography Distributed Active Archive Center (PO.DAAC) User Working Group (since 2015; currently co-chair).

Member of NASA's Ocean Salinity Science Team (since 2014) and Surface Water and Ocean Topography Science Team (since 2016).

Member of US Climate Variability and Predictability (CLIVAR) Phenomena, Observations, and Synthesis panel (2015-2018; co-chair 2018-2019).

Member of US CLIVAR Working Groups on “Uncertainty Quantification for Ocean Observations and Modeling” (co-chair) and “Mesoscale and Frontal-Scale Ocean-Atmosphere Interactions and Influence on Large-Scale Climate”.

Chief Scientist, 2017 SPURS-2 cruise to eastern tropical Pacific Ocean.

Co-organizer of 2020 US CLIVAR Workshop on Surface Currents in the Coupled Ocean-Atmosphere System; co-organizer of 2016 and 2018 NASA Coupled Ocean Surface Variables workshop; organizing committee, 2018 Ocean Salinity Science Conference and 2017 Frontiers in Ocean-Atmosphere Exchange workshop.

Session chair for Ocean Sciences Meeting (2016, 2018, 2020), AGU Fall Meeting (2016, 2017), OceanObs'19 conference, and EGU meeting (2019, 2020).

Reviewer for *Journal of Climate*, *Journal of Physical Oceanography*, *Journal of Geophysical Research*, *Geophysical Research Letters*, *Oceanography*, *Journal of Oceanography*, *Climate Dynamics*, *Remote Sensing of the Environment*, and *Dynamics of Atmospheres and Oceans*, as well as for NSF; panel reviewer for NASA.

## Mentoring and Community Activities

Mentoring: Pacific Science Center high school intern (2015); undergraduate research assistant (2014-2016); NASA Summer Undergraduate Research Program students (2015, 2017, 2019); graduate student (Suneil Iyer; since 2015); and postdocs (Elizabeth Thompson, 2016-2019; Caitlin Whalen, 2017-2018; Bàrbara Barceló-Llull, 2019-present).

Organizing member of UW “SeaTalk” group to build community and reduce harassment in those participating in fieldwork (since 2017).

Member of APL “Early Career PI” group (since 2017).

Participant in Pacific Science Center “Science Communication Fellowship” program (2015).

Annual outreach at University of Washington “Math Day” (since 2015).

## Conference and Workshop Presentations

- 2020 Ocean Sciences Meeting, San Diego, CA. Oral presentation.
- 2019 Surface Water and Ocean Topography (SWOT) Science Team Meeting. Bordeaux, France. Oral/poster presentation.
- 2019 US CLIVAR Atmospheric Convection and Air-Sea Interactions over the Tropical Oceans workshop. Boulder, CO. Oral presentation.
- 2018 Surface Water and Ocean Topography (SWOT) Science Team Meeting. Montreal, QC. Oral/poster presentation.
- 2018 Ocean Salinity Science Conference. Paris. Oral presentation.
- 2018 Ocean Sciences Meeting, Portland, OR. Poster (invited) and oral presentation.
- 2018 Tropical Pacific Observing System (TPOS-2020) workshop. Boulder, CO. Oral presentation (invited).
- 2017 Surface Water and Ocean Topography (SWOT) Science Team Meeting. Toulouse, France. Oral/poster Presentation.
- Global Ocean Salinity and the Water Cycle Workshop. Woods Hole, MA. May 2017. Oral presentation.
- Frontiers in Ocean-Atmosphere Exchange: Air Sea Interface and Fluxes of Mass and Energy meeting. Cargèse, France. May 2017. Oral presentation (invited).
- EGU General Assembly 2017. Vienna, Austria. Oral presentation.
- Implementation of Multi-Disciplinary Sustained Ocean Observations workshop. Miami FL. Feb. 2017. (Invited).
- 2016 AGU Fall Meeting. San Francisco, CA. Poster Presentation.
- 2016 Surface Water and Ocean Topography (SWOT) Science Team Meeting. Pasadena, CA. Poster Presentation.
- Liège Colloquium on Submesoscale Ocean Dynamics, Liège, Belgium, May 2016. Poster presentation.
- 2016 Ocean Sciences Meeting, New Orleans, LA. Oral presentation.
- Salinity and Freshwater Changes in the Ocean conference. Hamburg, Germany. Oct., 2015. Oral presentation.
- 2014 Sea Surface Temperature Science Team Meeting. Annapolis, MD. Oral Presentation.
- Aquarius/SAC-D Science Team Meeting 2014. Seattle, WA. Oral presentation.
- Earth Observation for Ocean-Atmosphere Interactions Science 2014 meeting. Frascati, Italy. Oral presentation.
- 2014 Ocean Sciences Meeting. Honolulu, HI. Poster presentation.
- Eastern Indian Ocean Upwelling Initiative workshop 2013. Yokohama, Japan.
- EGU General Assembly 2012. Vienna, Austria. Oral presentation.
- Workshop Ateliers de Modélisation de l'Atmosphère 2012. Toulouse, France. Oral presentation.
- 2011 World Climate Research Programme Open Science Conference. Denver, CO. Poster presentation.
- 2010 American Geophysical Union Fall Meeting. San Francisco, CA. Oral presentation.
- International Meeting of Students in Physical Oceanography 2010. Seattle, WA. Oral presentation.

2010 Ocean Sciences Meeting. Portland, OR. Oral presentation.

2010 Australian Meteorological and Oceanographic Society Conference. Canberra, Australia. Oral presentation.

2009 Alpine Summer School on Monsoon Systems, Valsavarenche, Italy.

2008 American Geophysical Union Fall Meeting. San Francisco, CA. Poster presentation.

International Meeting of Students in Physical Oceanography 2008. La Jolla, CA. Oral presentation.

2008 Ocean Sciences Meeting. Orlando, FL. Oral presentation.