

Carson Riggs Witte

Columbia University • Lamont-Doherty Earth Observatory • cwitte@ldeo.columbia.edu • <https://carsonwitte.github.io>

Education

Columbia University	
PhD in Ocean and Climate Physics	Expected 2023
M.A. in Ocean and Climate Physics	2020
Pomona College	
B.A. in Physics with Engineering Concentration	2016

Research Experience

PhD Student: Columbia University (Advisor: Dr. Christopher J. Zappa)	2018 – present
<ul style="list-style-type: none">• Co-production of Knowledge with Indigenous Elders in Kotzebue, Alaska to study the changing sea ice conditions in Kotzebue Sound and the Bering Strait region.• Multidisciplinary study of the sea surface microlayer to quantify the impact of biological processes on air-sea fluxes and the surface ocean heat budget onboard R/V Falkor.	
Field Engineer: Christopher J. Zappa Lab, Lamont Doherty Earth Observatory	2016 – 2018
<ul style="list-style-type: none">• Trained in deployment and recovery of oceanographic moorings and drifters, building standalone and ship-based Direct-Covariance flux systems, and remote sensing from drones.	
Lab Intern: NASA Jet Propulsion Laboratory	2015 – 2016
<ul style="list-style-type: none">• Worked on the design and implementation of a quadrupole ion trap mass spectrometer intended for immediate use onboard the International Space Station, future use on manned missions to Mars, and missions to Europa and Venus	
Research Assistant: Pomona College // Leibniz Universität Hannover	2014 – 2015
<ul style="list-style-type: none">• Worked predicting, measuring, and analyzing the quantum transitions of diatomic molecules using the Fourier Transform Microwave Spectrometer in Hannover.	

Publications

- Witte, C. R.**, Zappa, C. J., Mahoney, A. R., Goodwin, J., Harris, C., Schaeffer, R. E., Schaeffer Sr., R., Betcher, S., Hauser, D. D. W., Laxague, N. J. M., Lindsay, J. M., Subramaniam, A., Turner, K. E. & Whiting, A. (under review at *Journal of Geophysical Research: Oceans*). The Winter Heat Budget of Sea Ice in Kotzebue Sound: Residual Ocean Heat and the Seasonal Roles of River Outflow.
- Wurl, O., Bird, K., Cunliffe, M., Landing, W. M., Miller, U., Mustaffa, N. I. H., Ribas-Ribas, M., **Witte, C.**, & Zappa, C. J. (2018). Warming and Inhibition of Salinization at the Ocean's Surface by Cyanobacteria. *Geophysical Research Letters*, 45(9), 4230–4237. <https://doi.org/10.1029/2018GL077946>
- Wurl, O., Landing, W. M., Mustaffa, N. I. H., Ribas-Ribas, M., **Witte, C. R.**, & Zappa, C. J. (2018). The Ocean's Skin Layer in the Tropics. *Journal of Geophysical Research: Oceans*, 124. <https://doi.org/10.1029/2018JC014021>



Presentations

Witte, C. R., Zappa, C. J., Mahoney, A. R., Goodwin, J., Harris, C., Schaeffer, R. E., Schaeffer Sr., R., Betcher, S., Hauser, D. D. W., Laxague, N. J. M., Lindsay, J. M., Subramaniam, A., Turner, K. E. & Whiting, A. (2020). Observations of the heat budget of thinning coastal Arctic sea ice under the influence of a river outflow. *AGU Fall Meeting*. Poster. Virtual.

Witte, C. R., Zappa, C. J., Laxague, N. J. M., Mahoney, A. R., Betcher, S., Hauser, D. D. W., Subramaniam, A., Whiting, A., Goodwin, J., Harris, C., Schaeffer, R. E. & Schaeffer Sr., R. (2020). Observations of the heat budget at the ocean-ice interface during an anomalous Arctic winter. *AGU Ocean Sciences Meeting*. Talk. San Diego, CA.

Witte, C. R., Zappa, C. J., Laxague, N. J. M., Mahoney, A. R., Betcher, S., Hauser, D. D. W., Subramaniam, A., Whiting, A., Lindsay, J. M., Goodwin, J., Harris, C., Schaeffer, R. E. & Schaeffer Sr., R. (2020). The heat budget of sea ice in Kotzebue Sound. *Alaska Forum on the Environment*. Talk. Anchorage, AK.

Relevant Skills & Experience

Teaching Assistant, Columbia University <i>Earth's Environmental Systems: Climate Systems (Fall & Spring Semesters)</i>	Spring & Fall 2020
LDEO Ocean & Climate Physics Seminar Coordinator	2020 – 2021
Research Cruises & Field Work:	
Air-Sea Interaction Tower, WHOI MVCO (Deployment & Recovery)	2019 & 2020
RV Falkor, Equatorial Pacific Ocean (6 week cruise)	2019
Kotzebue, Alaska (2-4 weeks every season for 2 years)	2018 & 2019
RVIB Araon, Ross Sea, Antarctica (2 month cruise)	2018
RVIB Araon, Ross Sea, Antarctica (2 month cruise)	2017
RV Falkor, Timor Sea & Western Pacific (6 weeks)	2016
Fluent in Python, MATLAB, QGIS, Arduino, AutoCAD	