



## Barry A. Klinger, PhD

Associate Professor, Atmospheric, Oceanic, and Earth Sciences  
Research Scientist, Center for Ocean-Land-Atmosphere Studies

### Education

PhD, Physical Oceanography, MIT-Woods Hole Oceanographic Institution

### Key Interests

Climate | Ocean Circulation | Display of Quantitative Information

### CONTACT

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### SELECT PUBLICATIONS

- › Klinger, B. A., and Haine, T. W. N. (2019). Ocean circulation in three dimensions, Cambridge University Press.
- › Garuba, O. A., and Klinger, B. A. (2018). The role of individual surface flux components in the passive and active ocean heat uptake. *Journal of Climate*, 31, 6157-6173.
- › Garuba, O. A., and Klinger, B. A. (2016). Ocean heat uptake and interbasin transport of passive and redistributive components of surface heating, *Journal of Climate*, 29, 7507-7527.
- › Klinger, B. A., and Cruz, C. (2009). Decadal response of global circulation to Southern ocean zonal wind stress perturbation, *Journal of Physical Oceanography*, 39, 1888-1904.

### Research Focus

I use computer models to better understand how the ocean transports heat within the Earth system. The ocean plays an important role in carrying heat from the equator, where there is an excess of sunshine, to higher latitudes, where the heat makes the climate warmer than it would otherwise be. The ocean also carries heat downward from the surface as the world continues to warm because of climate change. Some of the uncertainty in understanding the Earth's response to rising greenhouse gases is caused by our lack of understanding of the ocean heat uptake. The ocean acts as a kind of flywheel that delays the Earth's response to climate change, and by better understanding how this happens, we will improve our ability to understand how much climate change will continue even after we eliminate carbon dioxide emissions to the atmosphere.

### Current Projects

- I am currently working on a new book: *How Bad? An Inquiry into Climate Change Consequences*.