



# ATOC COLLOQUIUM

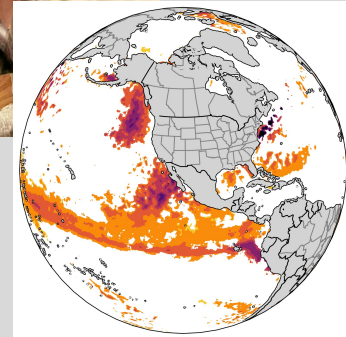
## Welcome!

Please join us for the next ATOC Colloquium on **Friday, April 28** from **11:00 AM–12:00 PM**, which will be held in **SEEC S228 and simulcast over Zoom**. This week's colloquium features **Dr. Michael Alexander (NOAA/PSL)**. Please join us for coffee beginning at 10:45 AM and stay for lunch catered by Illegal Pete's afterwards.

## Marine Heatwaves: Their Impacts, Causes, Predictability and Response to Climate Change

Marine heatwaves (MHWs) are periods of persistent anomalously warm ocean temperatures, which can have significant effects on marine life as well as coastal communities and economies. Extensive marine heatwaves occurred over the global ocean in the past ten years, including in the Gulf of Maine in 2012, and off the US west coast in 2014–2016 (termed “The Blob”) and again in 2019. The warming had complex effects on marine ecosystems and species such as corals, lobsters and whales.

Extensive research on MHWs began about a dozen years ago and scientists at the Physical Sciences Lab have been involved in several recent studies that explore MHWs using global climate models and recently developed high-resolution ocean reanalyses. I'll present results from these studies including: i) the causes of MHWs associated with changes in mixed layer depth; ii) heat waves that occur at the ocean bottom in coastal regions, where many commercially important species live; iii) “thermal displacement” - the potential movement of marine species to avoid MHWs; iv) prediction of MHWs and v) how ocean heatwaves may change in the future. Long-term trends in MHWs strongly depend on how the mean warming associated with the increase in greenhouse gasses is considered.



**Location:** SEEC S228 & Zoom

**Zoom:**

<https://cuboulder.zoom.us/j/97845417945>

**Password:** ATOC

## About the ATOC Colloquium

The Department of Atmospheric and Oceanic Sciences (ATOC) Colloquium is typically held **every other Friday** from **11:00 AM–Noon**. Colloquia alternate between the following formats: (A) Full-length talk by a faculty member or invited speaker, (B) Three conference-length talks by graduate students. If you would like to nominate a speaker (including self), please email the ATOC Colloquium Committee Chair, Prof. Andrew Winters ([andrew.c.winters@colorado.edu](mailto:andrew.c.winters@colorado.edu)). Please visit [www.colorado.edu/atoc/colloquium](http://www.colorado.edu/atoc/colloquium) for further details.