**Project: Visualize ocean eddies colliding with the Kuroshio with Python**

**Project Background:**

Westward-propagating ocean eddies of ~100-km diameter frequently collide with the Kuroshio, a major western boundary current (analogous to the Gulf Stream in the Atlantic). These eddies are important because they can increase or decrease the strength of the Kuroshio. However, not much is known about how eddies disintegrate, how long it takes until they get swallowed up by the Kuroshio.

**Goal(s):**

* Download and visualize data (e.g., sea surface height, sea surface velocity)

to find ocean eddies off the coast of Taiwan

* (optional) How many eddies hit the Kuroshio during a 14-month period? How many clockwise and anticlockwise?
* (optional) What happens when an eddy meets the Kuroshio? How do eddies deform?

**Data:**

14 months of state-of-the-art global ocean simulation (MITgcm LLC4320) are publicly available at novel ~2-km horizontal resolution. (<http://maps.actualscience.net/MITgcm_llc_maps/llc_4320/>

<https://mitgcm.readthedocs.io/en/latest/overview/overview.html>

https://earth.nullschool.net

**Tools/Skills:**

Google Cloud with Pangeo to access data. Python xarray, dask, matplotlib packages for plotting and numpy for simple statistics. Core code will be provided.

https://pangeo.io