## Near-inertial Waves and Submesoscale Dynamics in the Gulf of Mexico

We seek a postdoctoral scholar to join our collaborative team exploring the physical dynamics of the submesoscale in the presence of strong near-inertial waves. Two years of detailed observations of turbulence, internal waves and frontal dynamics were collected in the coastal waters of the Gulf of Mexico from multiple simultaneous vessels and provide a unique dataset to explore submesoscale ocean physics. The data are part of the SUNRISE project (Submesoscales Under Near-Resonant Inertial Shear Experiment), and include approximately 50,000 turbulence profiles, very high-resolution towed thermistor chain and ADCP data from 4 synchronized vessels, and moorings that span several different dynamical regimes during 3-week campaigns in the summers of 2021 and 2022.   While some initial results have been published (see Qu et al, Nature Comm, 2022, doi:10.1038/s41467-022-33251-7), a vast amount of data is available for this Postdoc to explore. The Postdoc will have considerable latitude to pursue their own directions with the data analyses and interpretation, and will also be supported by a larger team that includes observational components led by Jen MacKinnon (Scripps) and numerical modeling efforts by the groups led by John Taylor (Cambridge) and Leif Thomas (Stanford). Collaboration is strongly encouraged within and outside these groups.
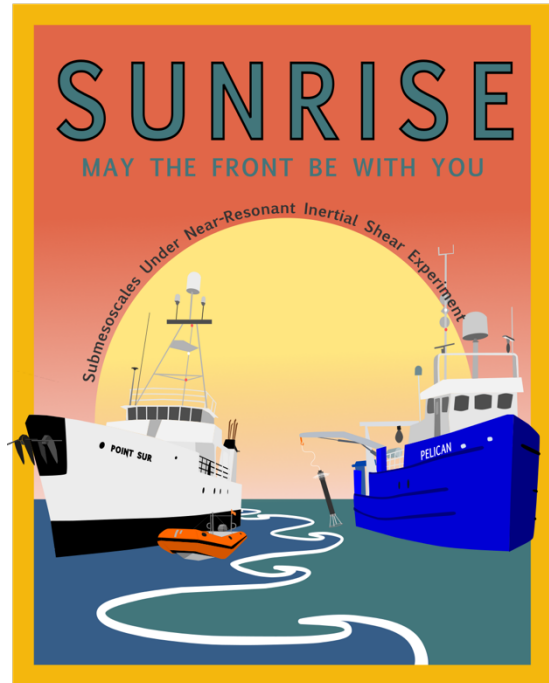
At OSU, the Postdoc will work under the mentorship of Jonathan Nash, Jesse Cusack and Kipp Shearman. The mentor team will help the Postdoc to gain additional skills and experiences, for example, by providing opportunities to conduct fieldwork at sea. The position is renewable annually, so long as the postdoctoral scholar remains within five years from receipt of their doctoral degree; reappointment is contingent upon performance and continued funding availability and is at the discretion of the PIs and the OSU Office of Postdoctoral Programs. Stipend and benefits conform with postdoctoral scholar standards at OSU (http://gradschool.oregonstate.edu/postdocs).

The Postdoctoral Scholar will work independently but will also regularly consult with their mentors to make decisions on research directions. The individual must be self-directed and capable of making decisions that affect the research program. At the same time, collaboration is strongly encouraged, and the Postdoc will need to work in complementary ways with other researchers (PIs, students, etc.) to attain project goals. It is expected that the Postdoc will integrate code that they develop for reading and processing data into open-source repositories.

A PhD in Oceanography, Fluid Dynamics, Engineering, Physics, Applied Mathematics, or related fields is required. Strong publication record in prestigious peer reviewed journals. Ability to conduct physics-based analyses on a large, multi-faceted oceanographic dataset using programming languages such as python or MATLAB. Ability to work independently. Strong commitment to work collaboratively in a group composed of diverse participants with different expertise, gender, identities and/or nationality.

For more information, and to apply, send a cover letter, resume(c/v) and names of two references to Jonathan.Nash@oregonstate.edu and/or Jesse.Cusack@oregonstate.edu