**Oceanography:**

**Antonietta Quigg**: (two projects - looking for Post Doc, visiting student or traditional student) - One project will investigate the consequence of oil spills associated with natural and man-made environmental disturbances in an effort to develop research based information for protecting estuaries in Texas, using Galveston Bay as a model system. Quantify levels of oil-derived hydrocarbons pollutants in water and biota. Our working hypothesis is that monitoring of pollutants, fish and shellfish will allow analysis of environmental effects.

The second project examines role of riverine flows by developing a conceptual model of estuarine recovery rates. Hurricane Harvey rapidly "flushed" out Galveston Bay while low riverine flows after the Deer Park fire mean the residence time of pollutants may exceed weeks/months. We will examine role(s) of riverine waters in modifying oil related pollutants and their pathways through food webs using a series of bioassays. Specifically, we will examine Marine Oil Snow Sedimentation Flocculation and Accumulation (MOSSFA) of this material. MOSSFA pathways were found to be key after the Deepwater Horizon oil spill and may play a role in estuaries. This will allow mapping of submerged oil in Galveston Bay and understanding the fate and degradation of residual oils.

**Yina Liu**: (looking for visiting student or traditional student)  Research focuses on using molecular level chemistry and biology to understand mechanisms that drive large scale processes in the Earth system, such as trace gas production and global carbon cycle. My work employs state-of-the-art mass spectrometry (e.g. ultrahigh resolution mass spectrometry) for untargeted chemical analyses, as well as high sensitivity mass spectrometry for targeted analysis. The combination of these techniques permits new compound discovery and quantification of key organic compounds in the environment. In addition to natural organic compounds, my recent projects also include understanding the distribution, fate, and transport of per- and polyfluorinated alkyl substances (PFAS) and pharmaceutical and personal care products (PPCP) in the marine environment.

**Anthony Knap**: The Geochemical and Environmental Research Group (GERG) is past of the College of Geosciences at Texas A&M University and is wishing to recruit Post Docs and visiting students from 1 to 2 years from OUC in both Oceanography and Environmental Science disciplines. The laboratory is engaged in marine chemistry (water quality analysis as well as part of a Superfund Program, investigating contaminants in the environment. It has a suite of very sophisticated instrumentation such as LC/Mass Spectrometers and single and triple quadrupole Mass Spectrometers for the analysis of sediments, water and tissues in the Marine Ecosystem.   Please contact Dr. Anthony Knap ([tknap@tamu.edu](mailto:tknap@tamu.edu)) for more information.

**Atmospheric Sciences:**

**Sarah Brooks**: There will be a position in my lab setting up a new series of climate experiments focused on the role of pollen in cloud formation.  Under the direction of myself and a more senior graduate student, Brianna Hendrickson, the student will set up a new environmental chamber with controllable temperature, humidity, and light levels.  Wind-blown pollination plants, such as Ragweed, will be placed in the chamber.   Air from the chamber will be sampled for aerosol concentration and size distribution, cloud condensation nuclei, and ice nucleating particles.

**John Nielsen-Gammon**: My research projection would involve analyzing scatterometer data and running coupled atmosphere-ocean simulations to understand the drivers of diurnal wind variations over the coastal ocean.  Previous research has shown that robust diurnal cycles can be created by the land/sea breeze, especially near the 30° critical latitude, but that boundary layer mixing cycles over land can have a large impact on winds over water under some circumstances.  In this project, the student or postdoc would analyze, simulate, and diagnose offshore diurnal wind variations and surface ocean responses near the critical latitude in the western Gulf of Mexico and the East China Sea.

**Yangyang Xu**: The quantification and prediction heat extreme, which has the following three science goals

S1.Improving the quantification and understanding of heat extreme through data analysis using advanced statistical methods.

S2. Improving seasonal to decadal predictive capacity of heat extreme using a state-of-art high-resolution global ocean-atmosphere climate model.

S3. Developing the statistical prediction and downscaling of heat extreme from low-frequency and low-resolution small-volume datasets.

**Renyi Zhang**: The student(s) will perform data analysis and model simulations to investigate the effects of natural and anthropogenic aerosols on tropical cyclones. The model framework will include mesoscale Weather Research and Forecast (WRF) cloud-resolving model and Global Climate Models, which are fully ocean-coupled.