

Webinar Series Presents:

**Dr. Xinping Hu & Dr. Leticia Barbero**

**August 21, 2019 12:00pm CENTRAL**

**"Ocean Acidification in the northwestern Gulf of Mexico"**



Leticia Barbero is an assistant scientist at the Cooperative Institute for Marine and Atmospheric Studies (CIMAS) from the University of Miami and conducts her work at the Atlantic Oceanographic and Meteorological Laboratory (AOML) of NOAA. Her area of expertise is the CO<sub>2</sub> system in the ocean. Her current research focuses on ocean acidification and its impact in coastal areas of the United States. As part of her work, she has participated and led several cruises aimed at studying OA conditions in coastal waters of the Gulf of Mexico and eastern coast of the US.



Xinping Hu is an associate professor in chemical oceanography and a Ruth A. Campbell Professor in Coastal and Marine System Science at Texas A&M University-Corpus Christi. His research interest includes coastal and estuarine carbon cycle, ocean and estuarine acidification, and their interactions in the context of changing climate and hydrological cycle. Over the years, his research has been funded by the Gulf of Mexico Research Initiative, Texas Sea Grant, Texas Water Development Board, Coastal Bend Bays and Estuaries Program, Texas General Land Office Coastal Management Program, National Academies of Sciences, Engineering, and Medicine Gulf Research Program, National Oceanic and Atmospheric Administration, and National Science Foundation. He is a recipient of the Faculty Early Career Development (CAREER) Award from the National Science Foundation.

A five-year (2013-2018) time-series of the carbonate chemistry data ( $p\text{CO}_2$ , pH, and carbonate saturation state) collected in surface waters at the Flower Garden Banks National Marine Sanctuary in the northwestern Gulf of Mexico (nwGOM) revealed variable temporal trends.  $p\text{CO}_2$  and pH showed significant positive ( $dp\text{CO}_2/dt = 9.7 \pm 3.2 \mu\text{atm per year}$ ) and negative trends ( $dp\text{H}/dt = -0.0086 \pm 0.0030$  per year), respectively. Both trends were significantly greater than those observed in the open ocean. However, carbonate saturation states with respect to aragonite ( $\Omega_{\text{arag}}$ ) did not exhibit statistically significant changes. The difference between these trends (or the lack of) may be partially due to the increase in sea surface temperature ( $0.59 \pm 0.29^\circ\text{C per year}$ ), in addition to CO<sub>2</sub> induced ocean acidification. In contrast, significant decadal acidification ( $\Delta\text{pH} \sim -0.1$ ) in the subsurface waters ( $\sim 50$ -250 m) was observed in the broader nwGOM based on three separate cruises (2007, 2016, and 2017). Substantial accumulation of respirational CO<sub>2</sub> along with atmospheric CO<sub>2</sub> uptake may have both contributed to this acidification, although there are still many unknowns. We will discuss an upcoming project funded by the NOAA's Ocean Acidification Program (OAP) that targets the ocean acidification problem in the nwGOM.

*Scroll down to page 2 for webinar instructions*

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Jennifer Vreeland is inviting you to a scheduled Zoom meeting.

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**Time: Aug 21, 2019 12:00 PM Central Time (US and Canada)**

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