

What's happening? AROUND THE BEND

Inspiring and educating past, present, and future stewards of our natural resources is one of the greatest rewards of the Coastal Bend Bays & Estuaries Program (CBBEP) efforts. Connecting communities with the knowledge necessary to properly care for our bays, estuaries, and all the life that resides in them would be impossible without the continued field research. The Texas Plastic Pollution Symposium (TPPS) migrated up the coast from its previous home at the Mission Aransas National Estuary Research Reserve in Port Aransas, Texas this year for the first time in its 5-year lifespan, trading the barrier island backdrop for green trees and low-hanging moss at the University of Houston – Clear Lake (UHCL).

TEXAS PLASTIC POLLUTION SYMPOSIUM

The TPPS was first created to form a mutual meeting space for scientists to discuss their efforts to clean the Texas waterways of plastic debris, some pieces needing a microscope to see and others requiring heavy equipment to remove. Though this gathering focuses on Texas waterways, researchers from around the world made the trip to UHCL to share their findings and collaborate with others while many attended the presentations virtually from across the globe. Alongside PhD-wielding researchers stood the next generation of pollution solution pioneers, the youngest yet to graduate middle school, conducting their own original studies aimed at understanding and reducing the environmental impact of plastics.

Throughout the day attendees had the chance to hear from 24 different researchers about the work being done to further our understanding of how plastics are affecting our waterways. Xiangtao Jiang tells of his experiments testing the effect of long periods of light exposure on the chemical structure of plastics, leading to their breakdown into microplastics that have become a hot topic in environmental research. Bringing attention to the newly observed, and largely unstudied, impact of microplastics coming from tire wear on the roadways, Cole Carabba, a graduate student at University of Texas – Austin, spent time vacuuming busy roadside shoulders for microscopic pieces of rubber shed by every tire that passes by. The amount of tiny rubber pieces found in only a square foot is enough to marvel at, multiplied by the millions of square feet of highway quickly becomes an astronomical amount of microplastics.

While the various types of microplastics may be tough to spot with the human eye, it's no strange sight to see empty rigid bottles and busted Styrofoam blocks littering ditches, roadsides, and shorelines across the state. Anabella Willems, an 8th grade researcher, set out to track just how quickly these bigger pieces of plastic debris are making their way from city streets, drainage ditches and bayous out into our bays. After sealing GPS trackers inside plastic bottles and setting them loose at various locations around the Galveston Bay watershed, she found that these bottles are likely to get stuck in these tributary systems, as the encounter rain-induced back flows and difficulty navigating their rudderless vessel around barge sized obstacles along the way.

During breaks from the Bayou Theatre, symposium attendees were able to see student submitted poster presentations while having any questions answered by the researchers themselves. One of the more interesting posters was that of Gloribel Carmona, another University of Texas - Austin graduate student, who was spending time looking into the Superworm, *Zophobos morio*, that may be able to chew through our plastic pollution problem. These worms can digest polystyrene pieces thanks to a unique enzyme found in their gut biomes. Gloribel and her classmates are working to understand, isolate, and recreate this enzyme in hopes of combating polystyrene pollution in landfills.

The Coastal Bend Bays and Estuaries Program was honored to sponsor student awards for the following students (left to right).

Taiwo Ayorinde – 3rd Place Presenter
Rogiberto Carmona -2nd Place Presenter
Gloribel Carmona – 1st Place Presenter

Emily Cox – 3rd Place Poster
Xiangtao Jiang – 2nd Place Poster
Ana Hernandez-Soriano – 1st Place Poster



After a day full of listening to research updates and hearing from president of Texans for Clean Water, Ms. Maia Corbitt, on current state of plastics, the only thing left to do was award the top student presenters for their work on understanding and resolving the plastic pollution problem. Amid a round of applause, the top three student presenters from the posters and presentations were called to the stage to accept their recognition for contributions towards fixing the plastic pollution problem. Though these scholars were the ones who walked home with the prize money, rest assured that many more are working tirelessly towards saving our future from the great plastic plague. You can watch the full symposium recording at <https://youtu.be/bHjAuSW5KGY>

