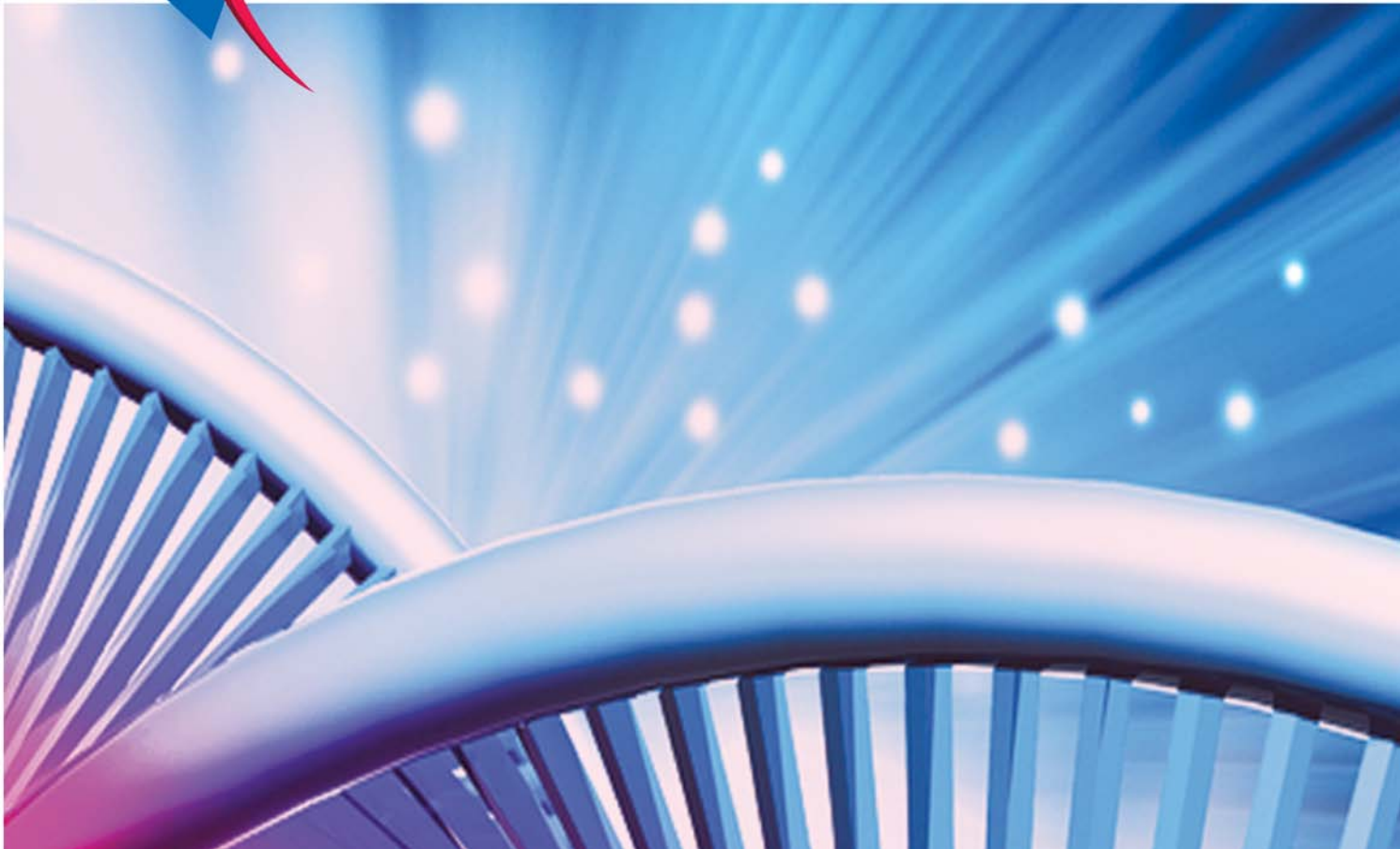
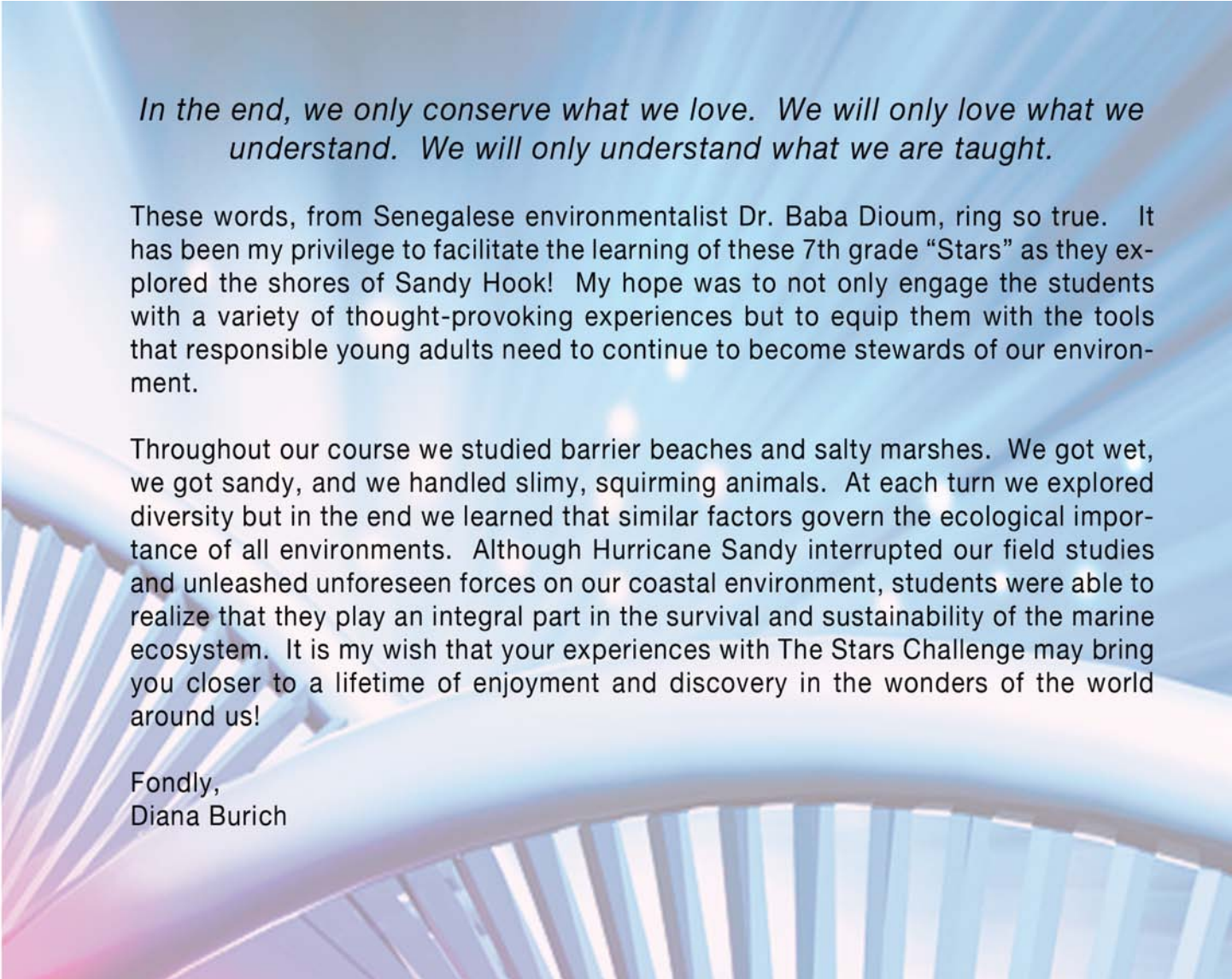




the stars  
challenge

Explore Our Shore  
Like Never Before  
Fall 2012





*In the end, we only conserve what we love. We will only love what we understand. We will only understand what we are taught.*

These words, from Senegalese environmentalist Dr. Baba Dioum, ring so true. It has been my privilege to facilitate the learning of these 7th grade “Stars” as they explored the shores of Sandy Hook! My hope was to not only engage the students with a variety of thought-provoking experiences but to equip them with the tools that responsible young adults need to continue to become stewards of our environment.

Throughout our course we studied barrier beaches and salty marshes. We got wet, we got sandy, and we handled slimy, squirming animals. At each turn we explored diversity but in the end we learned that similar factors govern the ecological importance of all environments. Although Hurricane Sandy interrupted our field studies and unleashed unforeseen forces on our coastal environment, students were able to realize that they play an integral part in the survival and sustainability of the marine ecosystem. It is my wish that your experiences with The Stars Challenge may bring you closer to a lifetime of enjoyment and discovery in the wonders of the world around us!

Fondly,  
Diana Burich



Seining is a great way to discover the diversity of marine species in the nearshore community. Analyzing chemical parameters in the environment helps students determine whether the salt marsh can adequately support marine life.

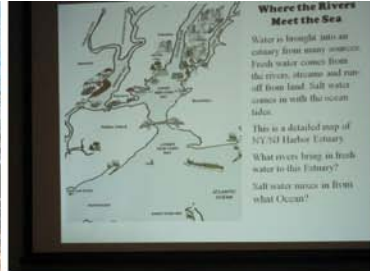


Sandy Hook's Horseshoe Cove provided the location on this gorgeous October morning.





Sandy Hook is home to a foreign invader, the Asian shore crab or *Hemigrapsus sanguineus*. Students study the frequency of occurrence, as well as size and gender in an invasive species study.





Top, left to right: Dan, Jack, & Ms. Burich; Rena; Cameo, Izzy, & Ms. Burich; and Zoe.  
 Bottom, left to right: Madeline & Ayana; Dane; Jack & Julia; Ayana & Zoe. No stones are left unturned as we hunt for crabs!





Learning about the structure and function of barrier beaches is a major concept in marine and coastal sciences. Jack is tossing an orange into the ocean to measure longshore current at North Beach. Katie is working on profiling the beach.



Rena is our marine chemist as she determines the salinity, pH and dissolved oxygen content of the ocean water. Charlotte giggles to herself as yet another student has talked her into recording data! Raquel is collecting shells for our predator prey study.



The group finds a female horseshoe crab in the shallows way past its season; encrusted with slipper snails, it is too heavy to walk on land. The group continues to sample the nearshore community of marine organisms.



Ayana and Dan analyze water chemistry as Jack tows a plankton sample. Madeline and Cameo sample the benthic community, hoping to dig up clams or worms. Dan tries to pass off a weird blue object he collected on the beach to Izzy.





The healthy marine environment at Sandy Hook is teeming with wildlife. Closer analysis in the classroom verifies that.



Surf clams, inhabitants of coastal surf zones, are hunted by moon snails; students study the predator-prey relationship between these two mollusks.



Classroom studies post-Hurricane Sandy have the students focusing on the composition, grain size and shape, and differences in sand, as well as the organisms that can be found dwelling in it. Physical and chemical characteristics of this type of sediment are indicative of a region's topography.







Students discover how the ocean stays in motion by analyzing wind-driven and thermohaline currents. Balloons were used to analyze the Coriolis Effect and how it contributes to global wind and water current patterns.





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The Stars Challenge at Monmouth University