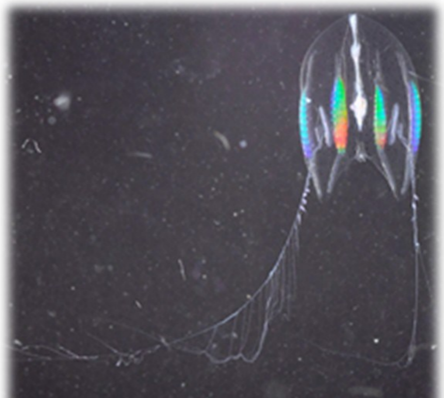
# Tentacles and the Jelly Web

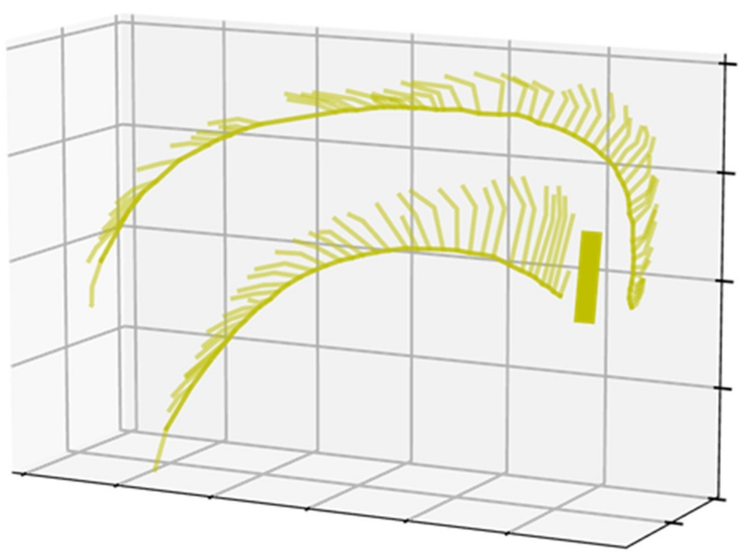
*Kevin T. Du Clos, Assistant Professor, Louisiana Universities Marine Consortium, Chauvin, Louisiana*

***The Science Issue and Relevance:*** Many gelatinous marine organisms are predators that use stationary tentacle arrays to capture swimming crustaceans, fish larvae, and other prey. These "tentacular ambush predators" (TAPs) can be found in three groups–ctenophores, siphonophores, and hydromedusae. TAPs are present in most marine ecosystems and are often the dominant predators, forming an important component of the so called “jelly web”, which describes the gelatinous portion of marine food webs. The predation rates of TAPs are largely unknown because fragile gelatinous organisms are under-sampled by net tows and gut content analyses and are difficult to collect and to work with in the lab. We are using 3D tentacle reconstructions to better understand the largely unknown roles of TAPs in food webs.



**A ctenophore poised to snag prey with it tentacle web**

***Benefit of Research to the State of Louisiana:*** The Gulf is home to at least 180 species of TAPs represented by three different taxonomic groups. This project will advance or knowledge of the role of these understudied marine predators in structuring their ecosystems and their potential influences on fisheries off Louisiana's coast.



**3-D Reconstruction of the tentacles of a ctenophore**

***Methods:*** To capture a diversity of TAPs, we are working in two field locations, Friday Harbor Laboratories in Washington and off the Kona coast of the Big Island of Hawaii. To reconstruct tentacle arrays and make relevant measurements, such as tentacle length and spacing between capture structures, we combine data from diver-operated 2D and stereo video systems with 3D laser scans of freshly collected organisms. We will calculate predation rates (number of prey captured per individual per day) using measured digestion rates and gut contents from diver-collected organisms and field videos. By combining these data with field measurements of predator and prey abundances we will calculate predation impacts for species with a range of tentacle arrangements.

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***Collaborator:*** Kelly Sutherland, University of Oregon

***Future Steps:*** Based on the patterns we find, we hope to develop a framework to use tentacle arrangement to predict the predation impacts of deep-water species and other species that are more readily observed by remotely operated vehicles than divers.