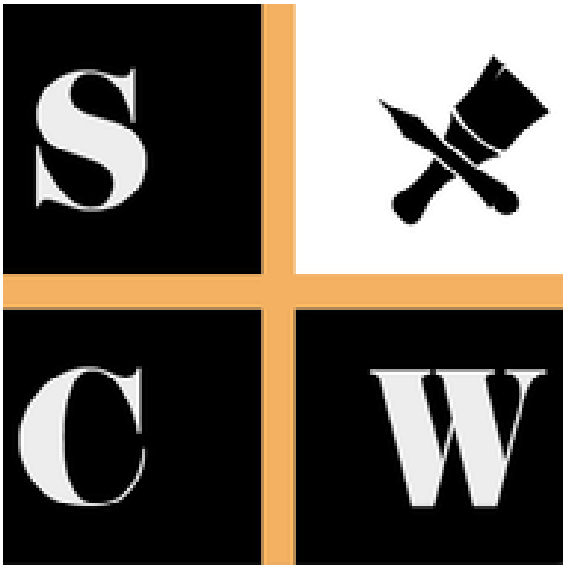


DOMINICAN UNIVERSITY of CALIFORNIA

Scholarly & Creative Works Conference

#10

Presenter: Trinity Lopez

Session & Time: Science I / 4:30 to 6:30pm

Room: Science Building

Discipline: Biology

Faculty Mentor: Doreen Gurrola

ZOO link:
ZOOM Passcode: DUC

Digital Portfolio URL:

Title: Marine Mammals: Skulls, Teeth and Oddities

Abstract:

In Professor Gurrola's research group, students focus on skull morphology of sea lions and sea otters. This project is a collaboration with the California Academy of Sciences and the US Fish and Wildlife Service. They obtain skulls from stranded marine mammals along the California coast. California Academy of Science houses one of the world's largest marine mammal specimen collections. For the sea otter project, students analyze echinochrome staining in otter skulls. The purple staining occurs from consuming sea urchins, which is their primary food source. Students rate the amount of staining on the teeth and bones. They also observe the dental pathology and note any abnormalities such as abrasions or fractures. The objective of this research is to determine the correlation between the pigment and demographics. For the sea lion project, students are measuring skull morphometrics (length, width, height). For males, the sagittal crest is measured, which is an attachment point for chewing muscles. Dental pathology is

noted, including abrasion or fractures. Each tooth is rated on the degree of abrasion. Additionally, any bone disorders are noted, such as osteoarthritis, gunshots, or entanglements. The objective of this study is to determine the correlation among sagittal crest height, abrasion, and abnormalities with their demographics.