DOMINICAN UNIVERSITY of CALIFORNIA

Scholarly & Creative Works Conference

2026

Presenter: Iman Yousaf

Session & Time: Poster_SCI

Room/Time: Science Bldg / 4:00-6:00

Discipline: Biology

Faculty Mentor: Doreen Gurrola

Digital Portfolio URL: https://sites.google.com/students.dominican.edu/iman-yousaf?usp=sharing

Title: Dental Abrasion Patterns of Male California Sea Lions in Correlation to Sagittal Crest

Abstract:

The adult male California sea lion (Zalophus californianus) has a prominent sagittal crest that supports strong jaw structure, showing a key difference compared to all California sea lion females. Although feeding habits and dental health have been associated with cranial morphology in marine mammals, it is unknown how sagittal crest growth and tooth abrasion relate to one another in male California sea lions.The purpose of this study is to determine whether sagittal crest height and tooth abrasion severity are correlated in mature males. Analysis was conducted on 247 male skulls from the California Academy of Sciences collection. Digital calipers were used to measure the skulls, including the maximum sagittal height, and a standardized three point scale was used to rate the severity of abrasions on thousands of teeth. In addition to having a higher sagittal crest height than subadults, adult males showed significantly higher levels of moderate and severe tooth abrasion. Sagittal crest height and abrasion

severity were positively correlated, with a greater correlation seen in adults, according to scatterplot analysis. Based on results, it is implied that higher tooth wear is caused by increased sagittal crest development, which is probably a reflection of greater bite force and temporalis muscle attachment. The morphological relationships between tooth health and eating performance in male California sea lions are highlighted in this study.