

MULTIMODAL DEVICE TO COLLECT EDA AND ECG FROM HORSES

Summer Research Project

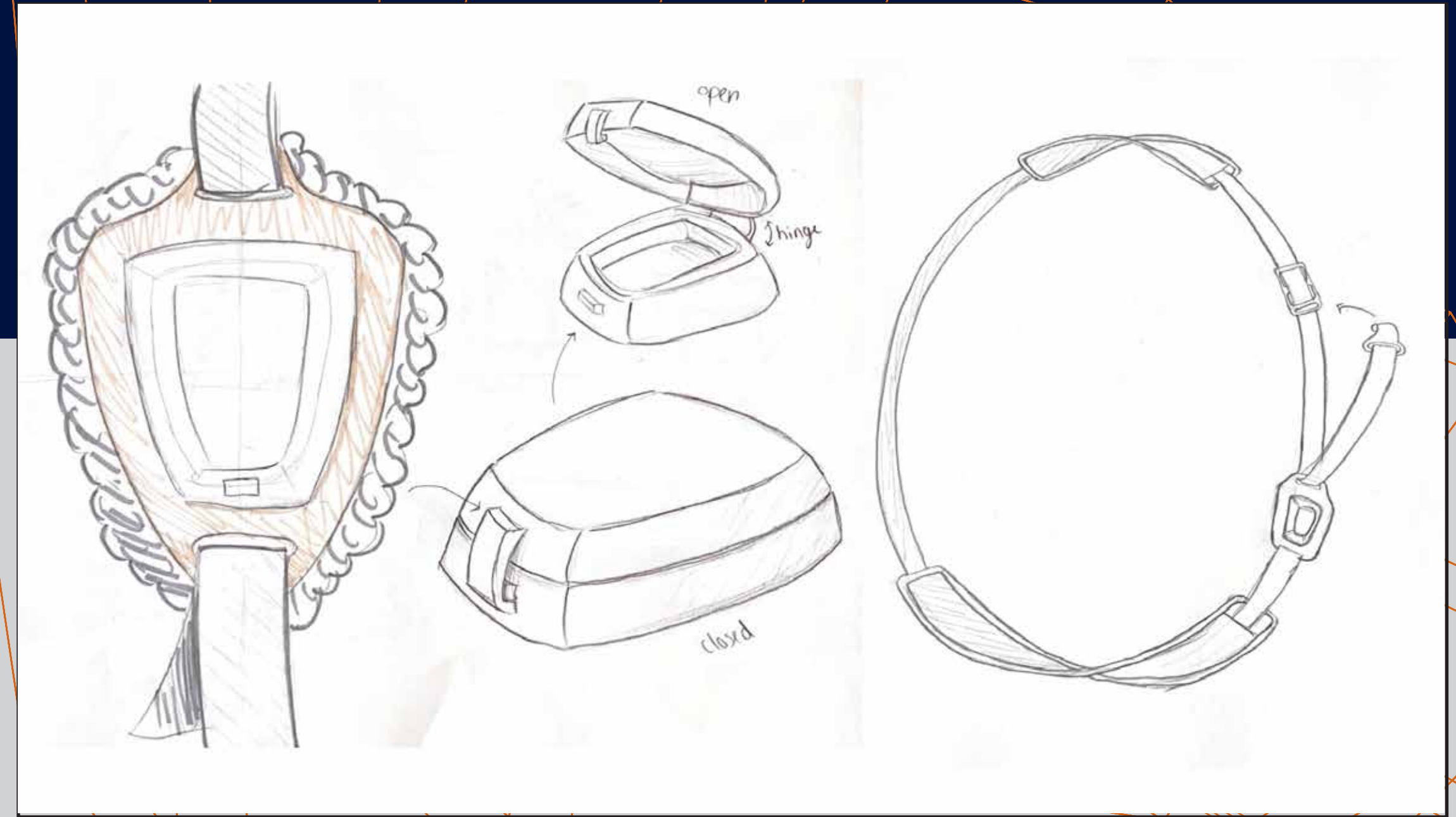
Student: Kelly Russell

Lead Advisor: Jorge Paricio Garcia, MID, HRM, PhD

Advisors: Hugo Posada Quintero, PhD Dept. of Biomedical Engr.
Sarah Reed, PhD, Dept. of Animal Science

Kelly Russell, a dedicated industrial design student in the Multidisciplinary Engineering program in the College of Engineering, led the development of a second-generation prototype for a multimodal device designed to gather data from electrodermal (EDA) and electrocardiogram (EKG) sensors, during the summer months of 2024.

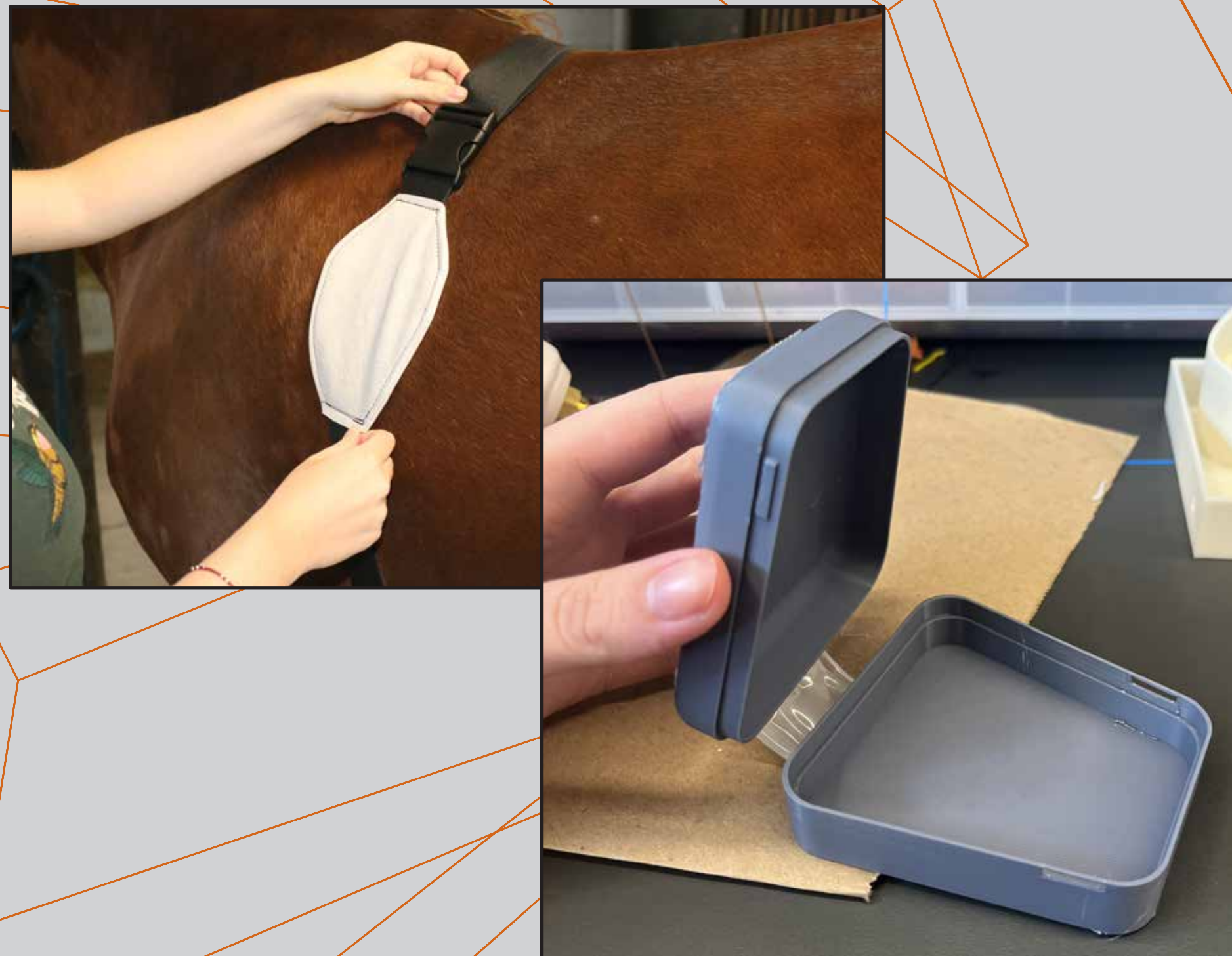
Building on preliminary designs from the Spring 2023 Soft Goods in Industrial Design class, Kelly significantly advanced the project by refining the initial prototype. The updated device aims to improve the accuracy and reliability of physiological data collection, which is crucial for various applications in animal health monitoring and research.



The process of advancing this design included creating sketches, a final rendering, multiple iterations of 3D models in SolidWorks, collecting fabric samples and sewing a variety of straps, and 3D printing models for testing on site.

To ensure the effectiveness of her second-generation prototype, Kelly conducted vital tests on horses. These tests allowed for real-world data collection and device performance evaluation under various conditions of use. Throughout the development process, Kelly collaborated closely with a full team of advisors and graduate students who are also engaged in this project.

This collaborative effort has resulted in a more robust and user-friendly prototype, paving the way for future advancements in wearable animal health monitoring technology.



UCONN | UNIVERSITY OF CONNECTICUT

KRENICKI ARTS AND ENGINEERING INSTITUTE