

DEPARTMENT OF BIOMEDICAL ENGINEERING  
COLLEGE OF ENGINEERING AND APPLIED SCIENCES

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE students

FOR APPLICATION YEAR: 2024

PROJECT TITLE: Rex: A Portable, Low-Cost, Adaptive Athlete-Friendly Device for Measuring Reaction Times as an Indicator of Concussion Severity

Orlando S. Hoilett, Ph.D.  
-----Assistant Professor of Biomedical  
Engineering  
College of Engineering and Applied Science  
University of Cincinnati  
-----554 Mantei Center  
2901 Woodside Drive  
Cincinnati, OH 45219  
-----B01 Bioscience Center  
3159 Eden Avenue  
Cincinnati, OH 45219  
-----Email: hoiletos@ucmail.uc.edu  
Phone: 513-556-7826  
Fax: 513-556-4162**Project Description**

This research study aims to investigate the relationship between concussion severity and reaction times in adaptive sport athletes with upper extremity impairments. The study utilizes the Rex device to collect comprehensive reaction time data, establishing baseline statistics for each athlete. By retesting athletes suspected of experiencing a concussion and comparing their post-concussion reaction times to the established baselines, insights into the severity of the concussion can be gained.

This project is in collaboration with the University of Cincinnati Medical Center with physicians and athletic trainers in orthopedics, sports medicine, etc.