

DEPARTMENT OF BIOMEDICAL ENGINEERING  
COLLEGE OF ENGINEERING AND APPLIED SCIENCES

RESEARCH OPPORTUNITIES FOR UNDERGRADUATE students

APPLICATION DEADLINE: April 29, 2024

PROJECT TITLE: Peapod: Measuring the Forces a Newborn Experiences During Transport Inside, Outside, and Between Hospitals and Other Critical Care Settings

Physical Requirement : Must be able to work in person

Project's Technical Skills Requirement : Electrical circuit design, microcontroller programming, MATLAB, Python, C, C++

Project's Available Positions : 3

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### Project Description

During transport, newborns experience quite a bit of physical force due to the different vehicles and mediums involved in the transport process. The effect of the cumulative forces applied to the newborn may have deleterious effects on their development; however, this phenomenon is not well-studied or characterized. Therefore, we're developing a miniaturized device that can be placed at various locations around an ambulance, helicopter, airplane (and other transport vehicles), and around the transport incubator to measure the forces applied to the newborn during transport.

This project is in collaboration with the neonatal intensive care unit and transport teams at Cincinnati Children's and Cincinnati Medical.