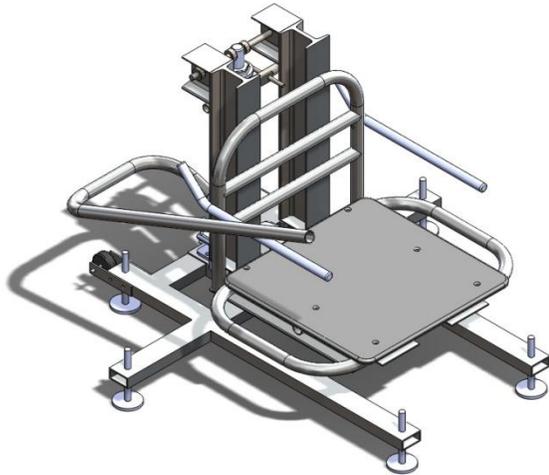


## TITLE: Assistive Transfer Device for Adaptive Sports

**GOAL:** The goal of this project is to help individuals with disabilities participate in adventure sports by designing a new transfer device that will keep participants safe by preventing skin abrasions and falls during transfers and will minimize strain on volunteers as they assist participants in transfers.



## ABSTRACT:

Adaptive adventure sports were developed to increase the participation of individuals with disabilities in adventure sports. The two main populations that participate in adventure sports identified by The Adaptive Adventure Sports Coalition are individuals with cerebral palsy and spinal cord injuries. Most participants with spinal cord injuries and cerebral palsy have limited lower body sensation and mobility, thus limiting their ability to transfer into and out of the adaptive equipment. Although numerous transfer devices are available today, many of these devices are extremely expensive, large, unsafe, or do not fulfill the needs of the participants. Therefore, there is a need for our team to design a new device to help these individuals with disabilities participate in adventure sports. A new transfer device will keep participants safe by preventing skin abrasions and falls during transfers and will minimize strain on volunteers as they assist participants in transfers. When finished, the device will be stable, strong enough to support any potential users, portable, and easy for the athlete to use while maintaining safety as the key priority.

After building completion, engineering testing, and clinical testing, our device meets all of our performance requirements for safety, stability, strength, portability, ease of use, and low cost. This includes holding the rated load of 300 lbs and allowing a total height change of 18 in., exceeding our 12 in. requirement. In the clinical feedback given by athletes at the Ohio Wheelchair Games the device received an average overall rating of 4.19 out of 5. By keeping safety at the forefront of each portion of the design process, we were able to improve upon existing transfer devices and increase the independence of the user while maintaining a safe and comfortable transfer process.