

## TECH 4398

### Appendix I: Senior Design Project Abstract

#### **Product Description: The Walker Lift Adapter**

The goal of our product is to assist elderly individuals in lifting objects and items that would otherwise be too heavy to do individually. The attachment works in conjunction with a walker and will be motorized to lift, suction, and release items to be relocated.

#### **Abstract:**

There are times when elderly individuals will not have the assistance (or ability) to comfortably rearrange and move items around their homes. This is especially true if they are bound to a walker, where both hands are needed to safely keep balance and accurately move the walker. The Walker Lift Adapter (WLA) is designed to assist in the relocation of items for people who may not have the ability to safely lift objects in a domestic setting. The goal of the project is to develop an assisted lifting device that can pick up items using a vacuum seal, set objects down precisely, and is consistently accurate while eradicating the need to put in manual labor. The WLA is going to be designed to adjust to any type of walker and have a maximum lifting capacity of around 6 PSI. This constraint allows the object to be lifted to have a weight range of around 80 to 100 pounds at maximum. The WLA is outfitted with a vacuum seal to hold onto the object it is lifting. It is designed to work as a motorized crane system that can suspend the desired item, giving it enough ground clearance for comfortable moving. This is until reaching the desired location where the item can be lowered with accuracy while ensuring the integrity of the item being transported. The WLA system contains a 3-way switch that allows for the lowering, suction, and raising of the item, conveniently placed onto the grips of the walker. We plan to see what aspects we can add, or reduce, to make the product more accessible and useful to all groups of people.

#### **Project Customer:**

Name: Byoung Hee You

Position: Associate Professor, Department of Engineering Technology

Email: by12@txstate.edu

Office Phone: (512) 245-2137

#### **Team 1:**

Jonathan Maltez (Project Leader)

Grayson Forks

Jack Landrum

Tyler Dunning