

**The Portable Office
Danielle Simmons**



Figure 1 – Coffee cup holder, pencil and cell phone charger holder



Figure 2 –wheels and base support legs



Figure 3 – Front view of the final design

Summary

Most backpacks on the market today allow for different carrying styles, however they still cause back strain which leads to discomfort and pain for individuals who carry a heavy load on a daily basis. The current solution for this problem has been the standard rolling backpack; however there are limitations in the current rolling backpack model such as difficulty rolling up and down stairs, traveling through the snow and weak handle connections that lead to a break in the handle or a deformation of the handle extension that causes the product to become useless. For these reasons the rolling backpack has lost potential customers and previous customers, who as a result of the limitations returned to the standard backpack, because they were forced to resort to picking up their backpacks in harsh winter whether or whenever climbing stairs.

This project consists of improving the rolling backpack system in order to achieve a higher level of proficiency, by adding on a device that can be adjusted to fit any standard backpack/briefcase. The mechanism will perform as a rolling device that will enable the customer to easily maneuver up and down stairs and through the snow. This device will also act as a personal organizing system with the addition of a coffee mug holder, pencil/pen/business card holder, coat hook, equipped with a laptop desk holder and a cell phone charger, as well as enhancing the aesthetic appeal in comparison to existing rolling backpack models. The requirements for this device are that it be easily maneuvered with a handle that is ergonomically designed to give a comfortable grip, allowing users to maneuver the backpack system productively over any terrain while decreasing the amount of back strain. Also it must be able to glide through snow easily and keep material in an organized manner. The system also needs to be portable and importantly expensive in order to be a marketable product.

The design concept consist of combining the wheel and handle dynamics of the standard baby stroller, automobile car cup holders, a dolly and the executive roller briefcases and the current rolling backpack system. To come up with a superior design that includes all of the unique features of each individual device into one all inclusive device that achieves all the requirements creating a system that serves as a portable office. Combining all of these elements into a superior final design to create a backpack system that will be a healthy more proficient way to carry heavy loads and remain organized while going to school, going to the office or traveling and engaging in business.