

## **The Flexible Automatic Robot Walker**

Every year, ME Prof Tyler Susko runs an after-school robotics program at Isla Vista Elementary School. Last Spring, a bright young girl named Lumi who was in the program heard that some of Prof Susko's students work on projects for people with disabilities. Lumi currently uses a power chair for mobility but would really like to walk because her dream is to be the owner of a bakery one day. One day, she handed Prof Susko the sketch on the next page and asked if his students could make this for her. He told her his students are the best in the world and could make her something that she could use, and so here we are!

Lumi would like a flexible automatic robot walker. We are looking for about 5-10 MEs and 4-5 EEs to tackle this project this year. The team will be given access to Labd4H (Dr. Susko's gait laboratory) and to the Naples Design Lab (EE Capstone Lab), and will go down the path of creating a useful solution for Lumi. This should be viewed as a design project with the outcome of getting Lumi to walk by the end of the year. This means, you should all be working as a design team to fully define the problem that Lumi needs you to solve. Your solution does not have to be an exoskeleton, nor does it have to resemble what she has drawn in the picture, but it does have to solve her mobility issue. We will set up a meeting for your team and Lumi at the beginning of the school year and sporadically throughout the year for you to fully define this problem. Prototypes should be plentiful to allow her to understand your concepts and for you to understand her needs.

This project will require interest in multidisciplinary work, product design, machine design, mechatronics, robotics, and control systems. Funding for this project has been generously provided by a number of local individuals who are interested in seeing this succeed and plan to be present for quarterly project design reviews.

# The flexible automatic robot walker

by Audrey and Lumi

