

AMYGO – Alzheimer’s Disease Treatment

Status: Filled

Group Members: Max Zou, Christopher Yee, Kenneth Tubungbanua, Noah Akkerman

Sponsor(s): Tech-E

Supervisor(s): Dr. Faranak Farzan, Mechatronic Systems Engineering

Project Description

Background

Alzheimer’s Disease (AD) is a progressive neurological disease that destroys brain cells, families, and lives. AD was the 9th leading cause of death in Canada for 2022. AD is caused by amyloid plaque. As Amyloid plaque builds up, it disrupts neuron functions and releases toxins, killing neurons. It is these mechanisms which are responsible for the cognitive decline of Alzheimer’s patients. Studies have shown that certain electromagnetic wave frequencies can kill bacteria that causes amyloid plaque buildup, and listening to certain tones of audio frequencies

Capstone II: MSE 411

The second prototype shall be made by August 1st, 2025 and it will be used for future animal and human trials.

The second prototype will consist of:

- 4 Single completed PCBA that will output both microwave frequencies and audio power
- 4 Completed device with integrated antennas and speakers
 - o Preferably battery powered for fully wireless operation