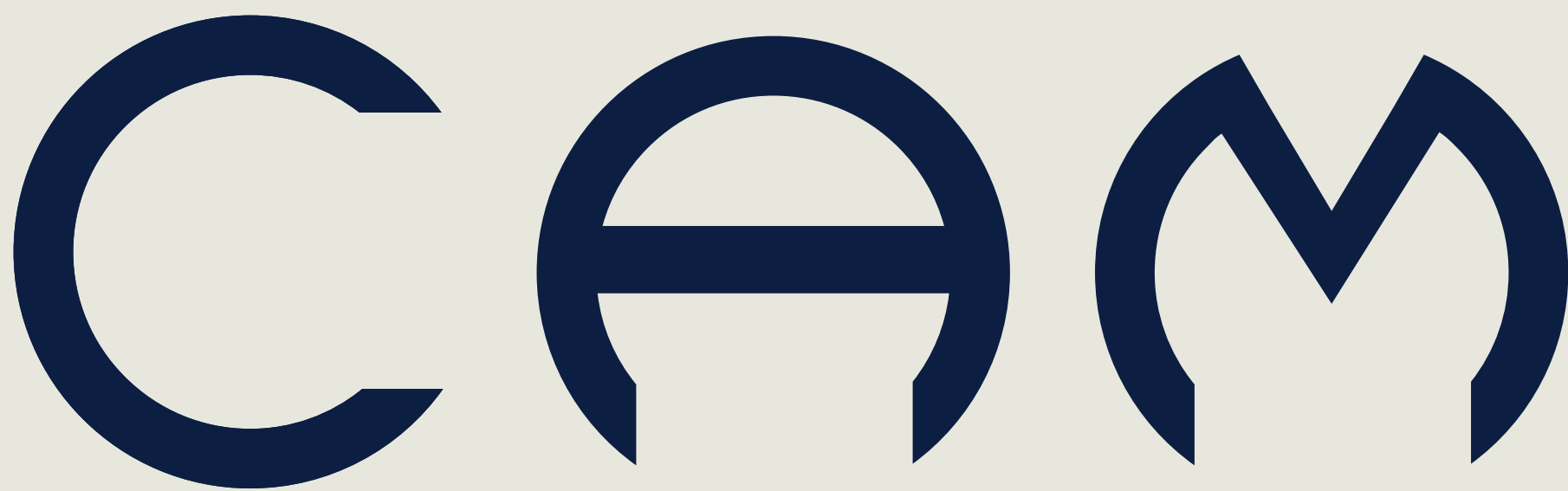


CLOTHING ASSISTANCE MULTITOOL



OUR TEAM

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Need for Commonwealth

Assistive Technology

- Products, equipment, and systems that work to enhance or maintain the functional capabilities of persons with disabilities, such as learning, working, and daily living.
- Maintain or improve an individual’s functioning related to cognition, communication, hearing, mobility, self-care, and vision.
- These products enable inclusion while promoting quality of life.
- It is for everyone
 - Will be used by most people at some time in their lives
 - Temporary,
 - such as after an accident or illness
 - Broken bones, head injuries, and/or short-term illnesses
 - Whole life (if a condition is present at a young age)
 - Genetic or chromosomal conditions
 - Longer periods of time as people age
 - Most needed by:
 - Older people
 - Very young children who have yet to tune their fine motor skills
 - Those with long-term health conditions

Universal Design

Equitable Use

- This product can be used by anyone! The tool is meant for anyone with impaired, or undeveloped, fine motor skills in order to allow them to gain independence in dressing themselves

Flexibility in Use and Low Physical Effort

- Due to the nature of assistive technology, this device is meant to help those with fine motor skills. The use of this device accommodates for those with those disabilities, but it can also make the task of putting on your clothes easier for everyone.

Simple and Intuitive Use

- The mechanisms of the elements of this device are easy to use, even for young children.

Perceptible Information

- The simple use of the design makes it easy to use for anyone without much thought or hassle

Tolerance for Error

- This easy-to-use design has no hazardous threats, and no accidental or unintentional actions could result in harm to the user.

Size and Space for Approach and Use

- This device is compact for all four main functions. It can easily be stored in a bag or kept in a common area (such as a classroom) for accessible use.

Engineering Design Process

Problem Identification

- Our group knew that we wanted to focus on a widespread issue that could be attributed to a large section of the population, hoping to focus on accessibility as that is a particularly large issue that we as a group decided would be necessary to address

Brainstorming

- We worked together with TechOWL to find a solution based off of issues that have been presented to them in the past: The main point coming up being the accessibility barriers of clothing

Prototyping

- We came up with multiple different prototypes, all of which featured different designs focusing on clothing accessibility.

Testing

- For each iteration we tested multiple factors: ease of use, universal design, and functionality

Iteration

- After each design we discussed downfalls then redesigned based off of different features we believed would aid in improving the final product.

Industry Partnership

TECHOWL

- Pennsylvania Department for Assistive Technology
- Centered at Temple University in Philadelphia
- Explore Assistive Technology
 - Borrow a device and receive a one-on-one demonstration with a specialist
- Education
 - Training and presentations about programs
 - Accessible Information and Communication Technologies (ICT)
 - Emergency preparedness
- CreATe Together
 - 3D printing of custom devices
- iCan Connect (DeafBlind)
 - A free program for those
 - with hearing and vision
 - loss to help:
 - Make a phone call
 - Send an email
 - Access the internet
 - Plus other advanced
 - communication



CAM

- Clothing Assistance Multitool
- Focused on providing assistance to those with issues with fine motor skills.
- Multiple tools conveniently kept together in the safety of one, easy to carry tool

Demographic

- Focus on everyone!
- Young children
- The elderly (Motor Control and Aging)
- Those with disabilities that affect fine motor skills (Fine Motor Disabilities)
- Includes an optional interchangeable cover that enables personalized customization in a field that lacks the ability to express one’s own creativity

Functions!



▪ Button Hook

- small wire loop connected to a 3D printed piece that can hook through a button loop, around the button, and pull it through.



▪ Snap Button Tool

- Effectively a large pair of “tweezers” to click the two sides together.



▪ Jewelry clasp tool

- connects to the small lever on a jewelry clasp in order to give the user a larger surface area in order to push the clasp open



▪ Zipper funnel

- two pieces which are held together by small magnets. Each side has a small track that allows the user to slide a zipper into each section, and connect the zipper together easily.

Project Budget For full breakdown,
Project Sources scan or click the
QR Code

