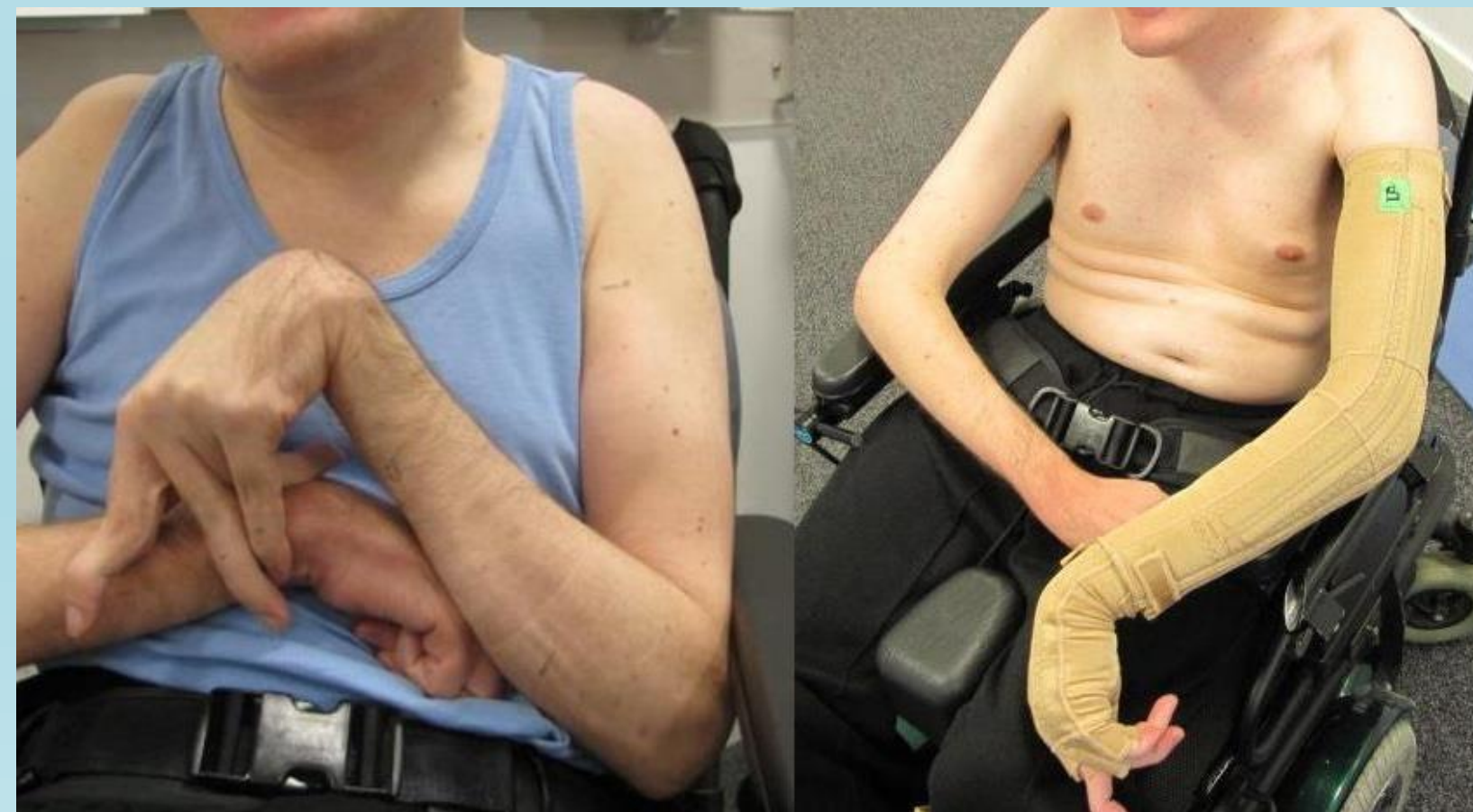


Wrist Exoskeleton

Robotic Rehabilitation – Release, Rehabilitation, Remobilization
 Advisor: Professor David Reinkensmeyer, Ph. D

Background

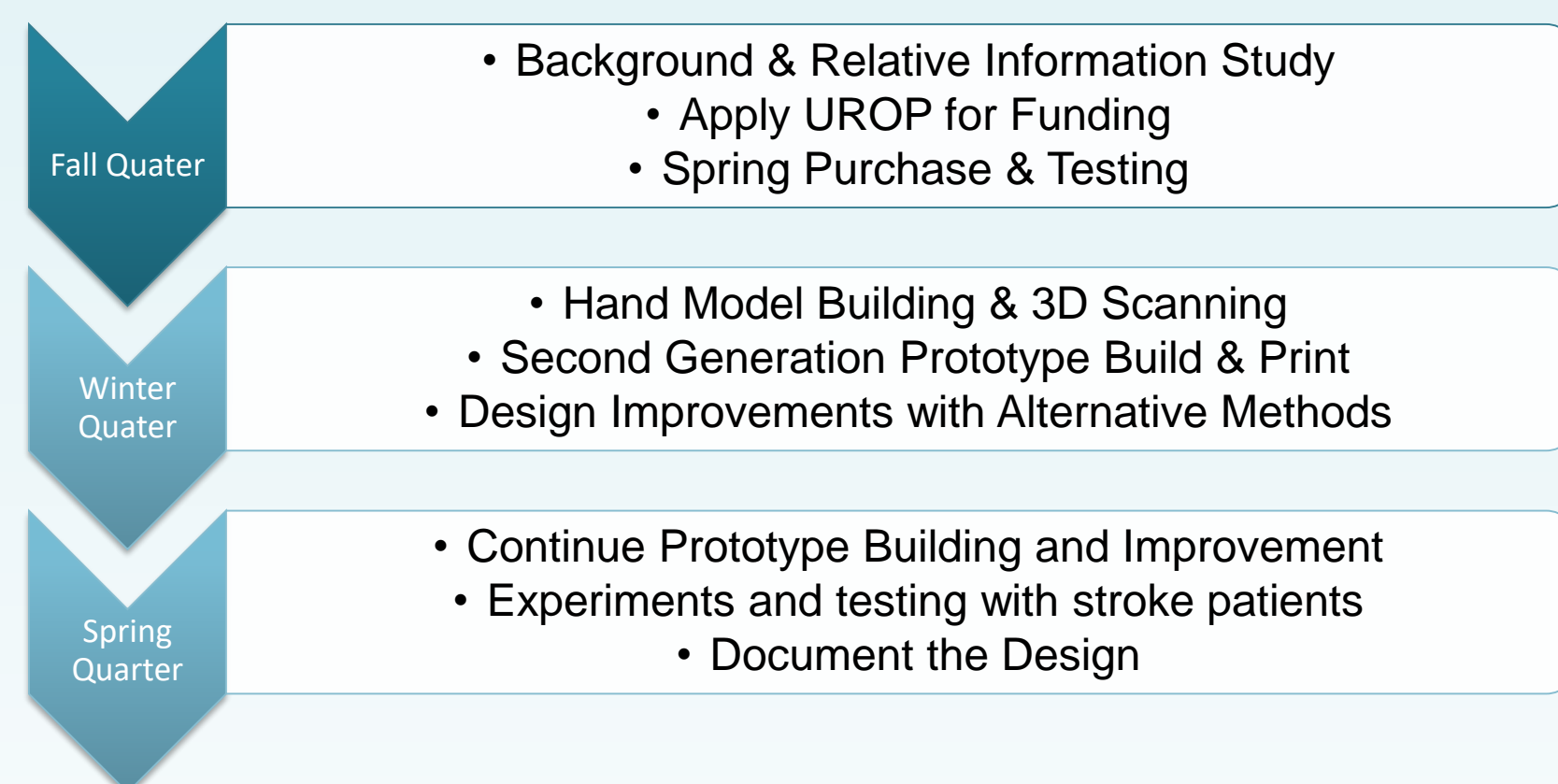
With the frequency of stroke occurring is increasing, there is a higher need to provide a more efficient and effective rehabilitation method. There are already previous research done using robotic therapy on patients that suffer a stroke.



Goals and Objectives

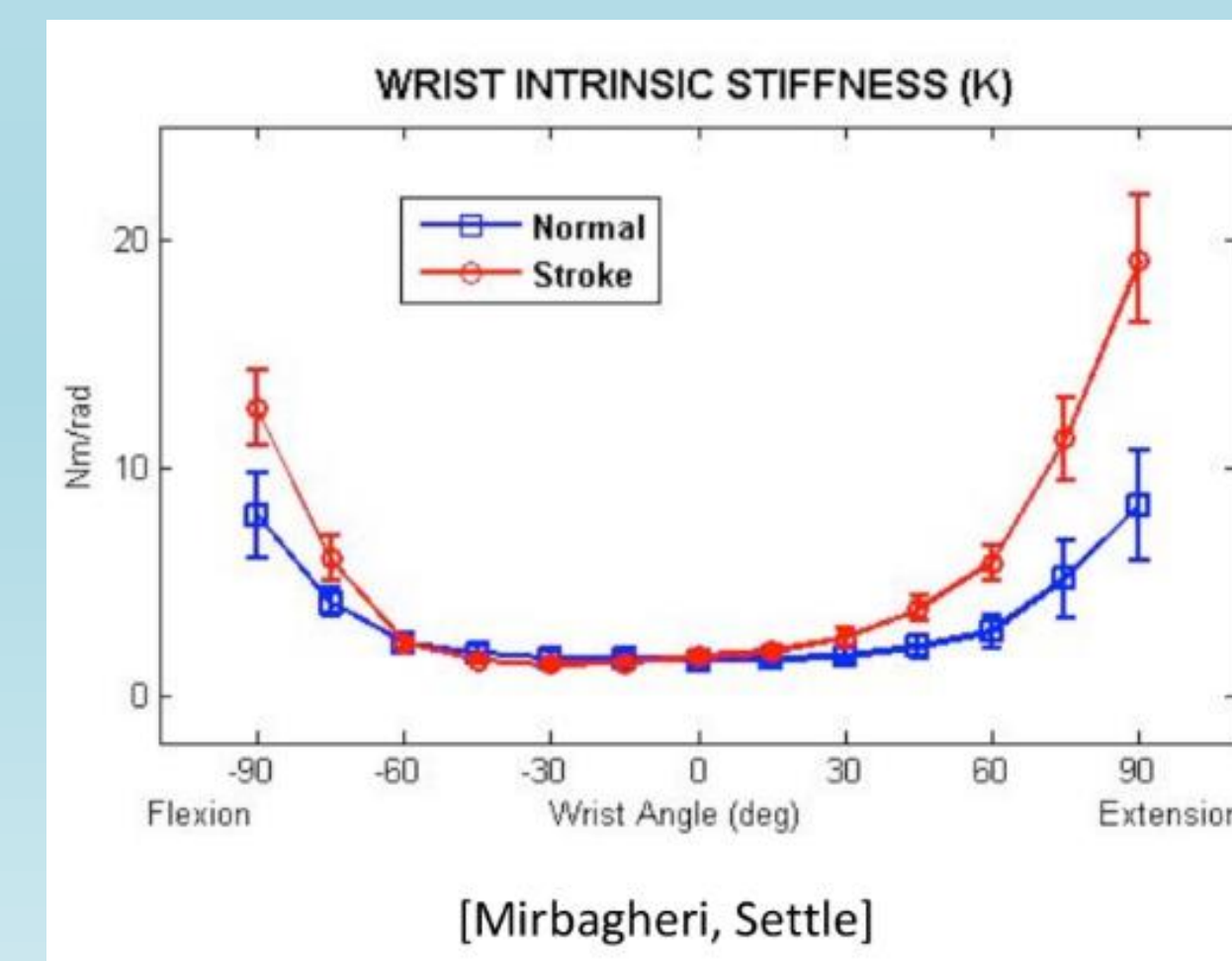
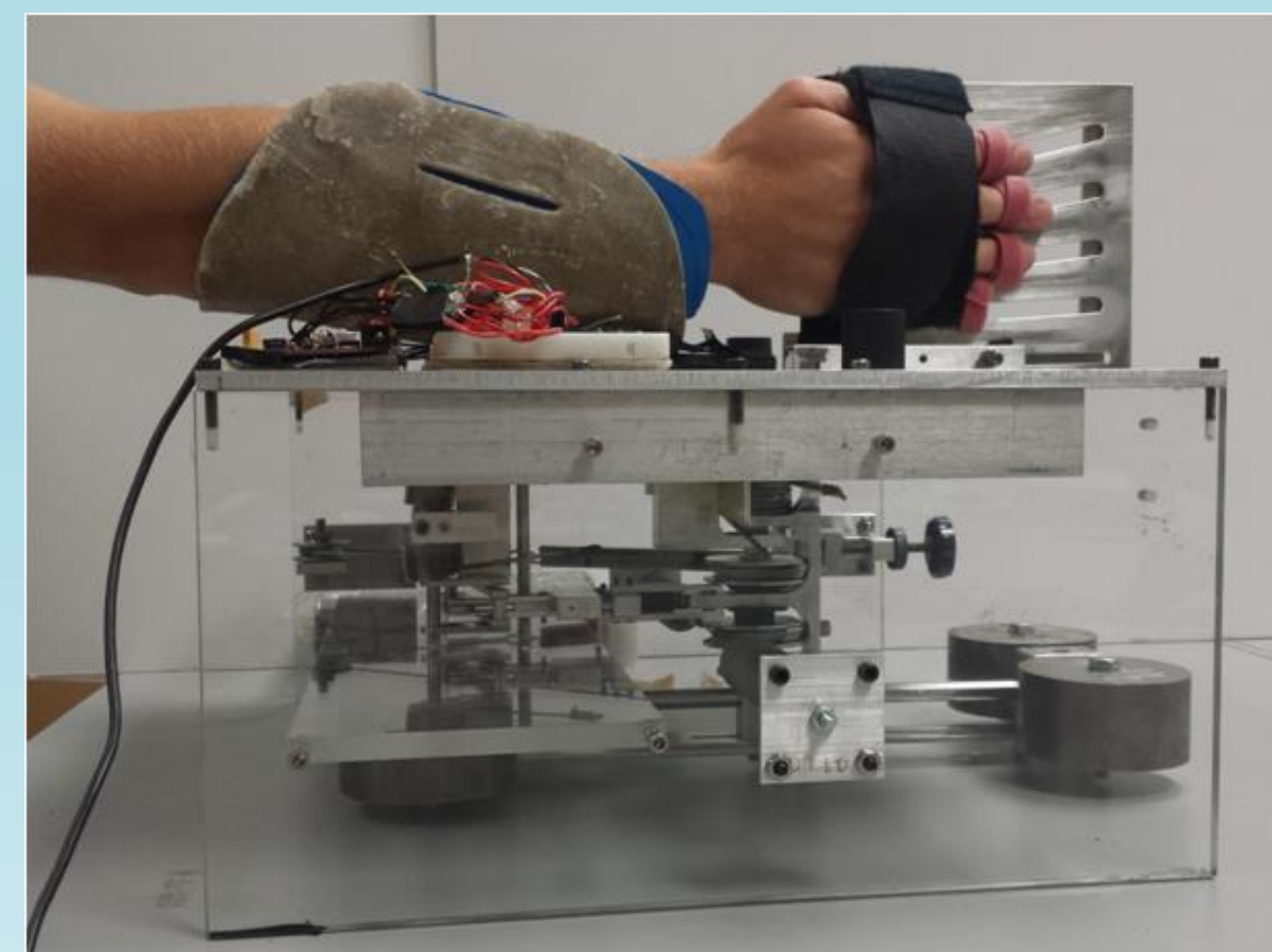
The goal of our project is to create a stand-alone wearable device using scaled down linkages to aid specific patient with movement in their daily lives. We are creating a wrist exoskeleton made with mostly 3D print and some metal parts. The main objective is to make a durable, strong, and light wrist exoskeleton so the patient can wear it freely.

Project Timeline



Previous Model & Study

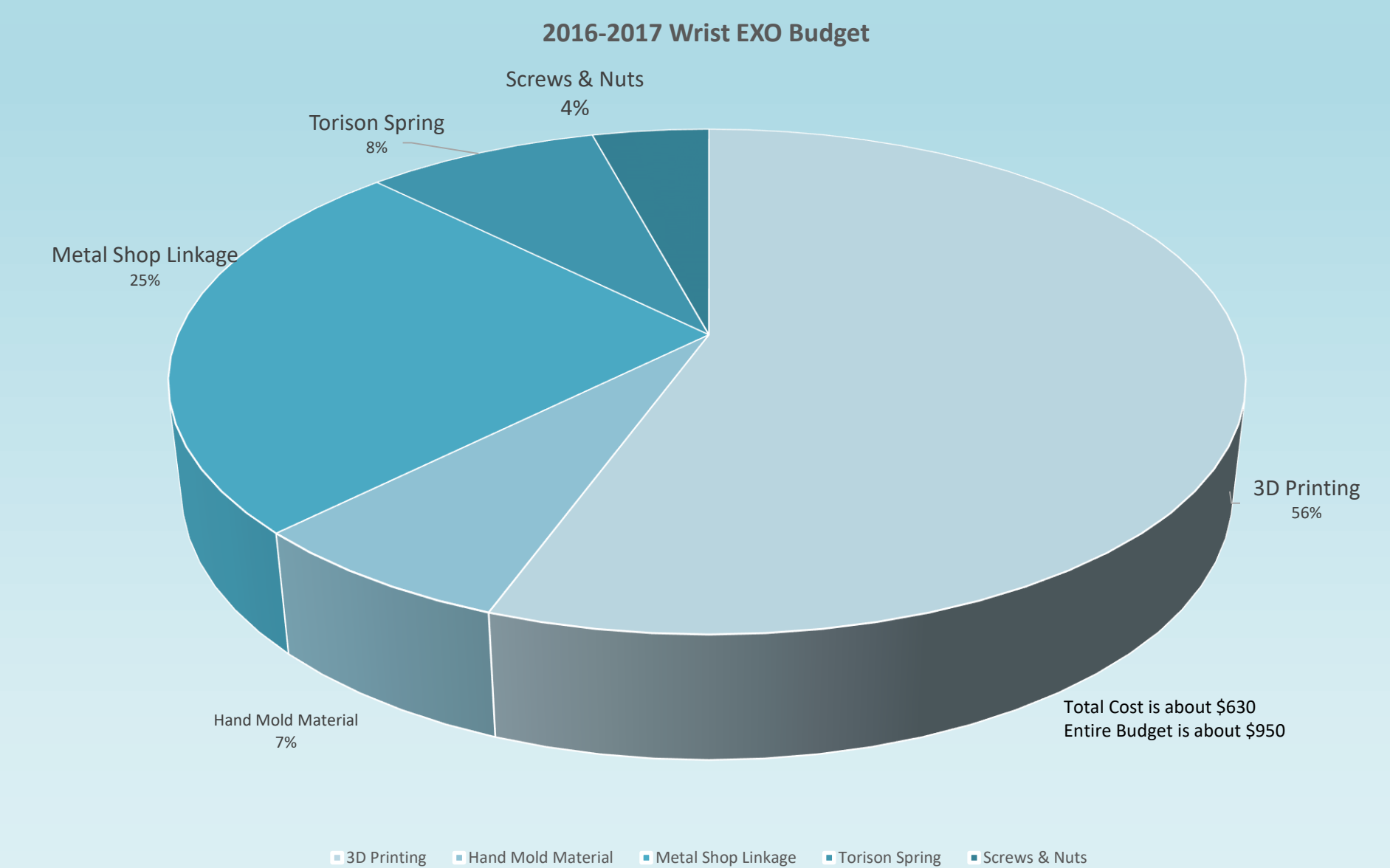
A previous study done by a doctoral student at UCI, developed a mechanism called WRIST. The purpose of the machine is to use a combination of torsional, linear springs, and linkages to create resonance with the system to aid the patient in moving their wrist. When a system operates at resonant frequency, it amplifies the movement. Using this concept, WRIST allowed stroke patients to gain more mobility on their wrist.



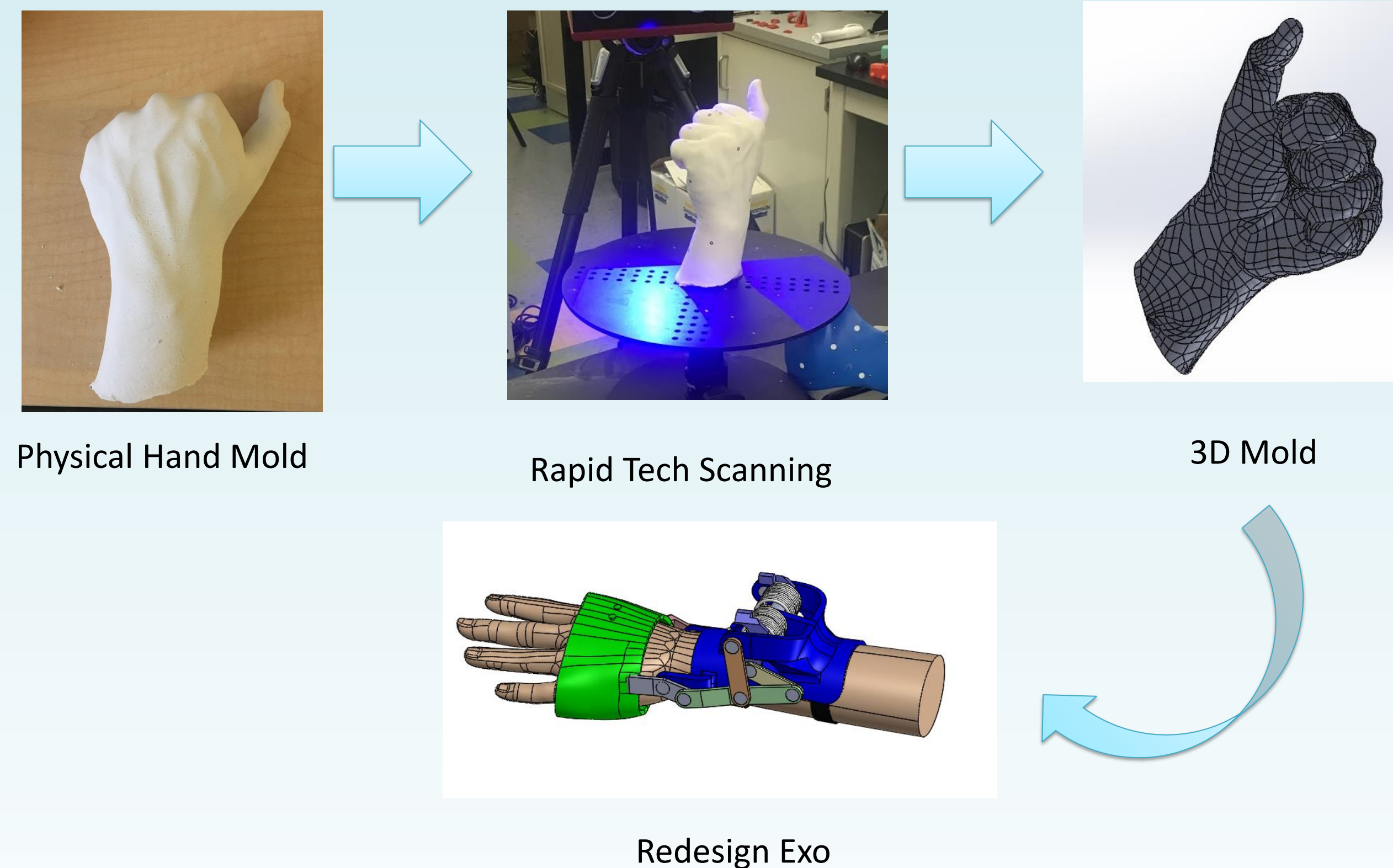
Future Work

In the next quarter, we will experiment on real stroke patients and have their feedback about the medical devices. From that data, we will adjust and reconfigure the device for the best performance and patient comfort. At the end, a scientific report about this device also will be generated.

Budget



Current Progress



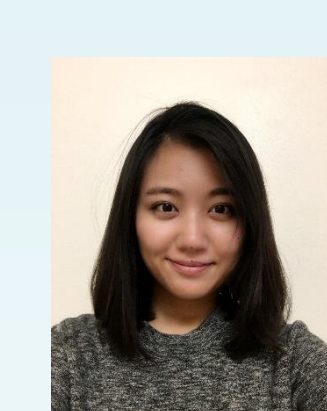
Team Member



Nathan Phung



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