3D Printing Airway Trainers: BME 400

Dates: 10/2/25 - 10/9/25

Client: Kristopher Schroeder, MD
Advisor: Dr. Paul Campagnola

Team:
Matt Sheridan (Communicator)
Dan Altschuler (Team Leader)
Cody Kryzer (BPAG)
Lance Johnson (BSAC)
Elleana Thom (BWIG)

Problem Statement

Airway management is an integral part of keeping a patient stable in many medical environments. While training medical practitioners with simple airway trainers has improved patient outcomes, this has not had the same effect on patients with abnormal airways. The use of 3D printing from existing patient imaging to create realistic and individualized airway manikins would assist medical professionals, allowing them to practice airway management skills on lifelike models.

Brief Status Update

The team gave their preliminary presentation on 10/3 and received positive feedback. The team reflected on the presentation and wrote the preliminary report. The 3D prints for the mold from decent simulators are complete.

Weekly Goals and Accomplishments

- Team
    - Preliminary report
- Matt Sheridan
    - Worked on preliminary report
    - Started segmenting on 3D slicer
- Dan Altschuler
    - Collected the print from Decent Sim and ordered silicone
    - Completed the preliminary report
- Cody Kryzer
    - Delivered preliminary presentation
- Lance Johnson
    - Worked on preliminary report
- Elle Thom
    - Delivered preliminary presentation. Worked on the preliminary report. Picked up 3D prints from makerspace.

Upcoming Goals

- Team
    - Get the scans segmented
    - Work on manikin design
    - Work on outreach activity
- Matt Sheridan
    - Continue segmenting scan, try different softwares
    - Begin creating manikin prototype
- Dan Altschuler
    - Continue work on the manikin design
    - Build a prototype to show Dr. Schroeder
- Cody Kryzer
    - Worked on preliminary report
    - Began working on outreach
- Lance Johnson
    - Continue working on the manikin and building neck adjustment mechanism
    - Segment scans
- Elle Thom
    - Start building a prototype
    - Start working on the outreach activity