3D Printing Airway Trainers: BME 400

Dates: 2/20/26 - 2/26/26

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 is getting ready for the preliminary presentation this week and continuing to strategize their designs and projects for the semester.

Weekly Goals and Accomplishments

- Team
    - Met to complete preliminary presentation and create a finalized outline of our plan for the semester
- Matt Sheridan
    - Combined files on SolidWorks to allow for a single print
- Dan Altschuler
    - Started preliminary report
- Cody Kryzer
    - Begin preliminary report
- Lance Johnson
    - Worked on preliminary report
    - Worked on modeling vocal chords & attachments to the airway insert
    - Researched materials/moduli for the vocal chords
- Elle Thom
    - Met with team to work on the preliminary report and talk over future goals for the semester

Upcoming Goals

- Team
    - Print the airway(s) and fabricate the base that we will place our airway on
    - Complete the preliminary report in the style of a Society for Airway Management journal
- Matt Sheridan
    - Edit files to print an airway that is difficult to intubate, can print multiple different airways
    - Design base of airway
- Dan Altschuler
    - Complete preliminary report
- Cody Kryzer
    - Work on report
- Lance Johnson
    - Continue work on locking in vocal chord material choice and methods for attachment to silicone cast
- Elle Thom
    - Start fabrication of manikin