3D Printing Airway Trainers: BME 301

Dates: 2/28/25- 3/6/25

Client: Kristopher Schroeder, MD
Advisor: Prof. Beth Meyerand

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

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 continued research into segmenting softwares, slicing softwares, and 3D printing. The team also reached out to the client about working towards getting the MRI airway scan.

Weekly Goals and Accomplishments
- Team
  - Completed the preliminary report
- Matt Sheridan
  - Researched and downloaded ITK-SNAP and 3D Slicer
- Dan Altschuler
  - Began working on ITK-SNAP
- Cody Kryzer
  - Give team feedback and reflect on received feedback
  - Downloaded ITK-SNAP
- Lance Johnson
  - Researched and downloaded ITK-SNAP to get more familiar with the software

Upcoming Goals
- Team
  - 3D print the trachea STL file from Dr. Sylvana-Garcia
- Matt Sheridan
  - Get an MRI or CT scan and begin slicing and preparing for a print
- Dan Altschuler

- ○ Continue to get used to ITK-SNAP
- ○ Begin getting familiar with 3D slicer
- Cody Kryzer
  - ○ Make a plan to print STL file from Dr. Sylvia
  - ○ Get MRI scans
- Lance Johnson
  - ○ Look into free slicing softwares and decide on a 3D printer to use in the makerspace