3D Printing Airway Trainers: BME 301

Dates: 9/5/25 - 9/11/25

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

Team:
Matt Sheridan (Communicator)
Dan Altschuler (Team Leader)
Cody Kryzer (BPAG)
Lance Johnson (BSAC)
Elle 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 met with the client, Dr. Schroeder, to determine what to focus on this semester and discuss the future work outlined at the end of last semester.

Weekly Goals and Accomplishments
- Team
  - The team met with Dr. Schroeder at the hospital to get a better idea of what he is looking for us to accomplish this semester.
- Matt Sheridan
  - Met with Dr. Schroeder to plan steps moving forward
- Dan Altschuler
  - Met with the client and determined a direction for this semester.
- Cody Kryzer
  - Met with Dr. Schroeder
  - Brushed up on last semester's progress
- Lance Johnson
  - Researched airway manikin sent to us by the client
  - Took notes at the client meeting
- Elle Thom
  - Went through past reports and documentation from the 2025 Spring semester, made a list of questions I have for the project. Attended the client meeting.

Upcoming Goals
- Team

- ○ Begin work on the manikin modeling
  - ○ Look into other resources for segmentation
- Matt Sheridan
  - ○ Research possibilities for adjusting the manikin
  - ○ Continue improving 3D Slicer skills, find new software if possible
- Dan Altschuler
  - ○ Order the free manikin from Decent Simulators
- Cody Kryzer
  - ○ Research adjustable manikins
  - ○ Make necessary updates to PDS
- Lance Johnson
  - ○ Look further into existing manikins that include the features we are looking to incorporate(mandible position, neck angle, tongue inflation, etc.)
- Elle Thom
  - ○ Do further research on my own. Add my notes and questions from last semester's documents to an entry in lab archives. Start looking through the PDS.