

3D Printing Airway Trainers: BME 400

Dates: 10/10/25 - 10/17/25

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 completed the preliminary report and ordered silicone to use with the Decent Sim mold. They also began segmenting the MRI scans to ensure the viability of the new scans, and of the 3D Slicer software.

Weekly Goals and Accomplishments

- Team
 - Preliminary report
- Matt Sheridan
 - Completed the preliminary report
 - Researched outreach activities
- Dan Altschuler
 - Collected the print from Decent Sim and ordered silicone
 - Completed the preliminary report
- Cody Kryzer
 - Completed preliminary report
- Lance Johnson
 - Worked on preliminary report
- Elle Thom
 - Looked into outreach activities for 5th grade kids

Upcoming Goals

- Team
 - Get the scans segmented
 - Work on manikin design
 - Work on outreach activity
- Matt Sheridan
 - Start work on the physical prototype
 - Finish a segmentation of the best scan
- Dan Altschuler
 - Continue work on the manikin design
 - Build a prototype to show Dr. Schroeder
- Cody Kryzer
 - Worked on outreach
- Lance Johnson
 - Continue working on the manikin and building neck adjustment mechanism
 - Segment scans
- Elle Thom
 - Start building a prototype
 - Continue working on the outreach activity