

3D Printing Airway Trainers: BME 400

Dates: 10/18/25 - 10/25/25

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

Weekly Goals and Accomplishments

- Team
 - Preliminary report
- Matt Sheridan
 - Completed segmentation of MRI scan on 3D Slicer
- Dan Altschuler
 - Collected the print from Decent Sim and ordered silicone
 - Completed the preliminary report
- Cody Kryzer
 - Researched silicone for mold
- Lance Johnson
 - Worked on preliminary report
- Elle Thom
 - Looked into pricing of mold kits
 - Put together a list of potential outreach activities to review with the team

Upcoming Goals

- Team

- Get the scans segmented
 - Work on manikin design
 - Work on outreach activity
- Matt Sheridan
 - Finalize outreach activity and set up time to do it
 - Begin to make a functional prototype for show and tell
- Dan Altschuler
 - Continue work on the manikin design
 - Build a prototype to show Dr. Schroeder
- Cody Kryzer
 - Segment scans
 - Work on making an adjustable manikin
- Lance Johnson
 - Continue working on the manikin and building neck adjustment mechanism
 - Segment scans
- Elle Thom
 - Building the prototype
 - Continue working on the outreach activity