

3D Printing Airway Trainers: BME 400

Dates: 01/30/26 - 02/5/26

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 met with Dr. Schroeder to get feedback on the Fall semester prototype. This semester the team plans to break into teams to complete the spring prototype. Lance and Matt will focus on the 3D slicer technology to enhance details in the print while Dan, Cody, and Elle will work on the Manikin.

Weekly Goals and Accomplishments

- Team
 - The team met with the client and received feedback on the Fall semester prototype
- Matt Sheridan
 - Met with client
- Dan Altschuler
 - Met with the client
- Cody Kryzer
 - Met with Dr. Schroeder
- Lance Johnson
 - Met with the client to discuss this semester's goals
 - Began deeper search into sources for literature background for our article
- Elle Thom
 - Met with client and received feedback on the Fall semester prototype
 - Continued research on methods to build intubation manikins

Upcoming Goals

- Team
 - Combine the mouth and airway into one mold
 - Prepare a preliminary presentation
- Matt Sheridan
 - Start working on 3D slices with the addition of complicated airway factors
- Dan Altschuler
 - Assist the aesthetics team with research on the manikin
 - Work on the preliminary presentation
- Cody Kryzer
 - Work on preliminary presentation
 - Brainstorm new designs for manikin base
- Lance Johnson
 - Start work on combining airway and mouth models in CAD
- Elle Thom
 - Start working on the manikin prototype
 - Work on preliminary presentation