

# 3D Printing Airway Trainers: BME 301

Dates: 1/24/25-1/31/25

Client: Dr. Kristopher Schroeder

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 began research into background and motivation for the project as to prepare for the first meeting with our TA. The team also made initial contact with the client and has plans to meet again next week in person to get his airway trainer and to also meet doctors at the hospital that are interested in helping with our project.

## Weekly Goals and Accomplishments

- Team
  - We met with the client and have plans to meet with the client next Tuesday to acquire his basic airway trainer and learn more about the project
- Matt Sheridan
  - Did research about airway anomalies and existing products attempting to solve the same problem
- Dan Altschuler
  - Did research for the background and motivation for our project
  - Set up the progress report for the week
- Cody Kryzer
  - Researched airway anatomy and different airway trainers and how they can be used
- Lance Johnson

- Researched common airway conditions and complications and looked at studies comparing the anatomical accuracy of existing airway trainers

## Upcoming Goals

- Team
  - Prepare for the advisor meeting on Monday and client meeting on Tuesday
- Matt Sheridan
  - Do research about 3D segmentation of CT scans to begin establishing our fabrication plan
  - Meet with last semester's group to talk about what they accomplished and if they have information about materials that we can build off of
- Dan Altschuler
  - Prepare for the client meeting on Tuesday
  - Continue research into airway anatomy
- Cody Kryzer
  - Continue research on airway trainers and airway anatomy
  - Meet with Dr Schroeder on Tuesday and tinker with the manikin he will give us
- Lance Johnson
  - Continue research into CT scan segmenting and the printing process
  - Meet with a member of last semester's team to discuss the project and see if they have any materials/prototypes that we can use