

# 3D Printing Airway Trainers

## Progress Report 4

**Client:** Dr. Kristopher Schroeder

**Advisor:** Dr. John Puccinelli

**Date:** 10/04/2024

### Team:

Maribel Glodowski [mjglodowski2@wisc.edu](mailto:mjglodowski2@wisc.edu) (Co-leader)

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Maiwand Tarazi [mtarazi@wisc.edu](mailto:mtarazi@wisc.edu) (BWIG)

Elle Heimer [eoheimer@wisc.edu](mailto:eoheimer@wisc.edu) (Team Communicator)

Nathan Klauck [nklauck@wisc.edu](mailto:nklauck@wisc.edu) (BSAC)

Ilia Mikhailenko [imikhailenko@wisc.edu](mailto:imikhailenko@wisc.edu) (BPAG)

### Problem Statement

Airway management is important in keeping a patient stable in various medical environments. While novel techniques and innovative devices for better airway management have decreased the difficulties medical professionals face, developing airway management skills in difficult and unique scenarios is essential to positive and effective patient outcomes. Developing a method of using 3D printing and existing patient imaging to create realistic airway training manikins would allow medical professionals to practice airway management skills with physiologically consistent results.

### Brief Status Update

The team assessed potential methods and materials with two design matrices. Additionally, the team has been working on constructing their preliminary slideshow in preparation for the presentation this Friday.

## Summary of Team Role Accomplishments

- Maribel Glodowski
  - Discussed design criteria and assignment with the team to come to a conclusion about what method and material we will continue to use
  - Created a preliminary presentation slideshow
  - Completed slides presenting a design method and a design matrix
- Jack Sperling
  - Assist in completing the design matrix to decide which route our team will chose to create our final project
  - Work closely with Maribel to provide the team with guidance and feedback on our preliminary presentation
  - Ask Dr. P about past airway trainer project and potential resources from that
  - Finished the preliminary presentation with the team
- Maiwand Tarazi
  - Worked on design matrix; came to conclusion on design decision
  - Worked on preliminary presentation
- Elle Heimer
  - Drafted design drawings for design #2 and #3
  - Worked on preliminary design presentation
  - Communicated with client about design and meetings
  - Discussed both criteria and number assignments of matrices with team
- Nathan
  - Preparation for second BSAC exec meeting
  - Attended BSAC meeting
- Ilia
  - Attended BPAG meeting
  - Conducted more research regarding the potential materials to be used in our design.
  - Worked on slides discussing the problem statement and background information regarding our project in preliminary slideshow

### Weekly/Ongoing Difficulties

- None to report currently

### Upcoming Team and Individual Goals:

The team goals include obtaining patient DICOM imaging from the client or open source databases.

- Maribel Glodowski
  - Finalize material selection
  - Meet with makerspace to better understand our access to printing with it and establish a printing timeframe and estimated cost
- Jack Sperling
  - Work with the Client to determine if it is possible for them to pay directly for makerspace costs or not
  - Ask makerspace staff to ensure they have the material (Formlabs 80A) and if they can print our other resin
- Maiwand Tarazi
  - Present preliminary presentation
  - Work on preliminary report
- Elle Heimer
  - Communicate with client about material recommendations
  - Finalize design and material selection with makerspace staff
- Nathan Klauck
  - Conduct further research on viable materials for our design
  - Prepare for the presentation next friday
- Ilia
  - Finalize slides for presentation
  - Practice presentation with team to ensure it is cohesive

### Activities Timesheet

Team Member	Time for the Week	Total Time for the Semester
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