

3D Printing Airway Trainers

Progress Report 5

Client: Dr. Kristopher Schroeder

Advisor: Dr. John Puccinelli

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Team:

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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 completed their presentation at the preliminary design presentations and continued work on the preliminary report.

Summary of Team Role Accomplishments

- Maribel Glodowski
 - Presented our project during the preliminary presentation
 - Completed sections of the preliminary report
- 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
 - Worked and completed design matrix with team
 - Presented preliminary presentation
- Elle Heimer
 - Create sections of preliminary report
 - Communicated with client about design and meetings
- Nathan
 - Preparation for BSAC meeting
 - Attended BSAC exec meeting
- Ilia
 - Worked on Motivation and Problem Statement in preliminary report
 - Researched information relevant to writing this part of the preliminary report
 - Met with team to plan for upcoming action items

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 and printing the first prototype airway.

- Maribel Glodowski

- Meet with Makerspace to better understand our access to printing with it and establish a printing timeframe and estimated cost
 - Find a DICOM file to segment
 - Print test materials at the Makerspace
- Jack Sperling
 - Work with makerspace staff to print samples of the two flexible materials that they have: 50A and 80A
 - Continue working with the client to find specific airway scans to segment for printing
- Maiwand Tarazi
 - Find DICOM files to create anatomical outlines for printing
 - Go to makerspace to understand feasibility of printing with 50A and 80A resin
- Elle Heimer
 - Begin making fabrication plans and finalize material
 - Communicate our progress with client
- Nathan Klauck
 - Work on background to preliminary report
 - Conduct further research if necessary
- Ilia
 - Finalize slides for presentation
 - Practice presentation with team to ensure it is cohesive

