3D Printing Airway Trainers

Progress Report 1

Client: Dr. Kristopher Schroeder

Advisor: Dr. John Puccinelli

Date: 9/13/2024

Team:

Maribel Glodowski mjglodowski2@wisc.edu (Co-leader)

Jack Sperling jwsperling@wisc.edu (Co-leader)

Maiwand Tarazi mtarazi@wisc.edu (BWIG)

Elle Heimer eoheimer@wisc.edu (Team Communicator)

Nathan Klauck nklauck@wisc.edu (BSAC)

Ilia Mikhailenko 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

Project selection concluded. There was a brief team introduction which included setting up the team drive, assigning team roles, and meeting with Dr. Puccinelli.

Summary of Team Role Accomplishments

- Maribel Glodowski
    - Set up the team notebook
    - Created a shared drive to organize documents and started to fill with document outlines
    - Started background research to get a basic understanding of the project and the purpose of airway trainers
- Jack Sperling
    - Assisted in setting up the team notebook
    - Divided up client provided research links
- Maiwand Tarazi
    - Set up project website
    - Uploaded team image onto website
- Elle Heimer
    - Sent emails to client, set up first meeting time/location/details
    - Began research on project background
- Nathan
    - Prepared for first week BSAC meeting
- Ilia
    - Completed research on 3D airway trainers used on animals and other relevant background

Weekly/Ongoing Difficulties

- None to report currently

Upcoming Team and Individual Goals:

The current team goals include beginning individual research, meeting with the client to define the specifications that are important to the project, and laying out expectations for the semester.

- Maribel Glodowski
    - Continue background research on the different difficult airway management cases that can occur

    - Create an outline for the project design specifications documents and start drafting
- Jack Sperling
    - Continue researching background and existing products
    - Begin researching materials and manufacturing methods to potentially use (latex modeling, 3D printing capabilities of makerspace vs outside provider)
- Maiwand Tarazi
    - Create calendar to organize progress report due dates
    - Begin literature search for airway trainers using links provided by Dr. Schroeder and other sources
- Elle Heimer
    - Further research background information using links provided by Dr. Shroeder
    - Begin drafting Project Design Specification
- Nathan Klauck
    - Further research on related topics
- Ilia
    - Continue researching existing airway trainer models to identify potential areas for improvement/design alteration

Activities Timesheet

Team Member	**Time for the Week**	**Total Time for the Semester**
Maribel Glodowski	2	2
Jack Sperling	2	2
Maiwand Tarazi	2	2
Elle Heimer	2	2
Nathan Klauck	2	2
Ilia Mikhailenko	2	2

Expenses:

- No expenses to report at this time

Project Timeline:

Task	Sept.			Oct.					Nov.					Dec.
	13	20	27	4	11	18	20	25	1	8	15	22	29	6
Project														
Brainstorming	X													
Researching	X													
Manufacturing														
Testing/Remodeling														
Deliverables														
Progress report	X													
PDS														
Mid-semester														
Final														
Meetings														
Team	X													
Advisor	X													
Client	X													

Website														
Update	**X**													