SILICONE HEAD MODELING AIRWAY FOR SLEEP APNEA RESEARCH

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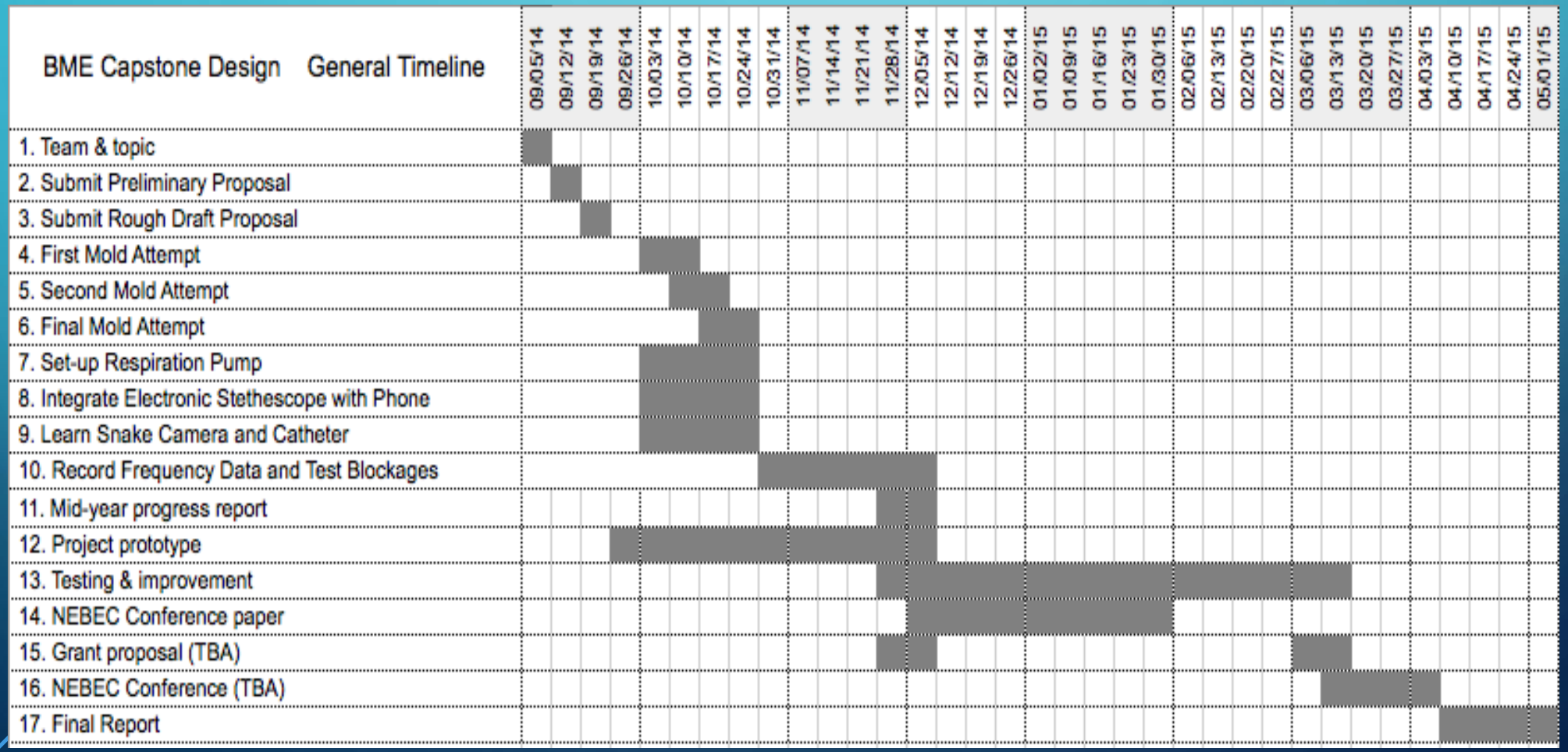
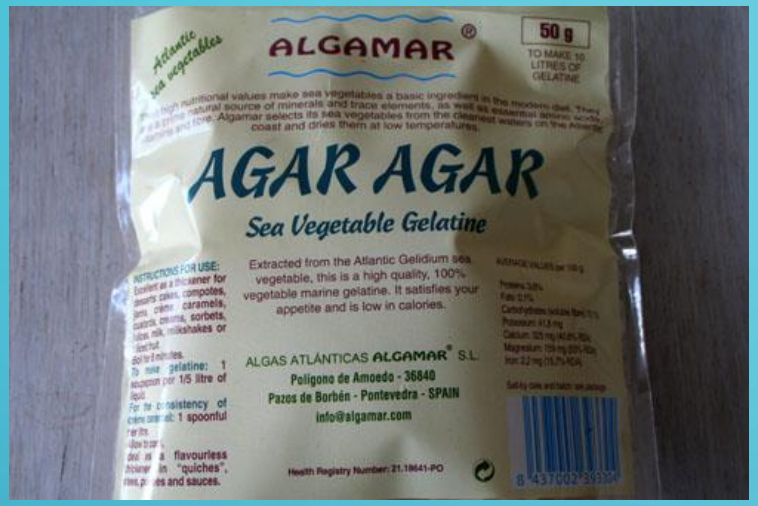
OVERVIEW/GOALS

- Our ultimate goal in this research project is to be able to measure the frequency spectra throughout the airway with different degrees of blockages.
- This will allow us to compare frequencies between a restricted and non restricted airways.
- Thus allowing us to quantify levels of sleep apnea at different blockage stages.



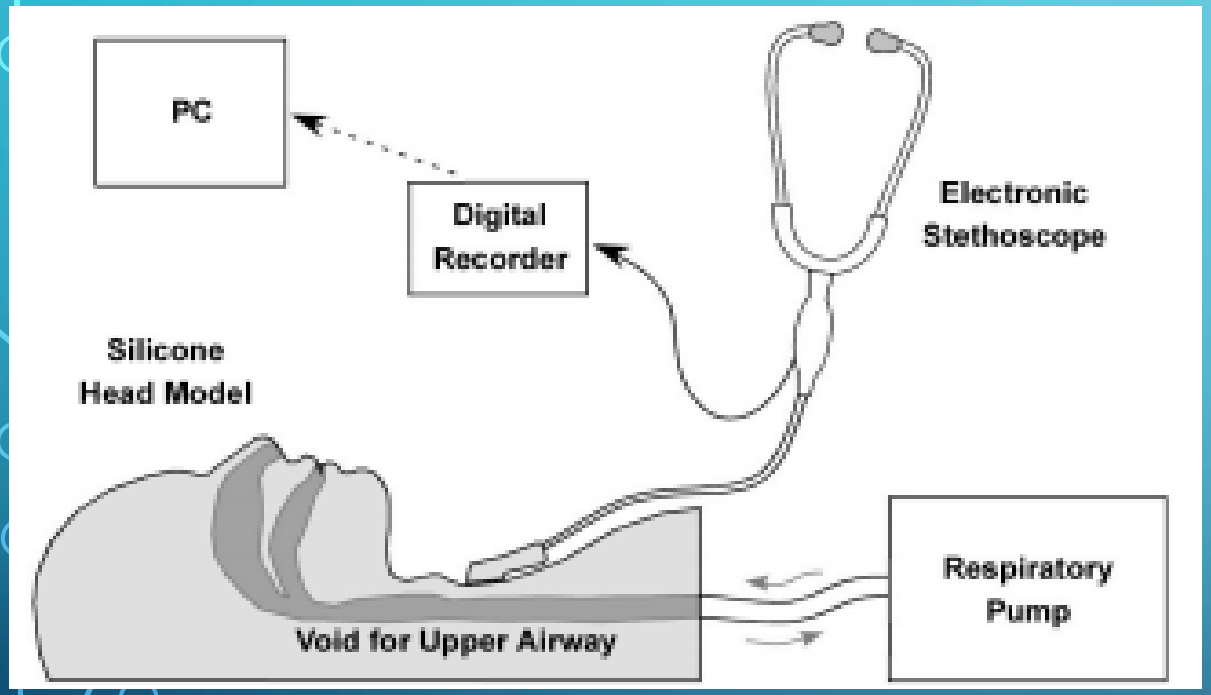
DESIGN PROCESS



Materials

- Smooth-On Mold Max Silicone Rubber
- AGAR AGAR Geleton
- Oven-bake clay
- Wood (for airway)
- Vacuum
- Harvard Apparatus model 607
- Snake Camera
- Balloon Catheter
- Electronic Stethoscope/Cell Phone

WHAT MAKES OUR RESEARCH UNIQUE



- We will be guiding a balloon catheter with a snake camera to block different spots within the airway. This allows us to map out and measure the different blockages and develop relationships between the blockages and the levels of sleep apnea.
- We will control the level of a blockage by inflating and deflating the balloon to certain levels to indicate different degrees of blockage (severity of sleep apnea).

REFERENCES

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