Final Proposal

TEAM H

FAHD ALASKAR, MOHAMMAD ALENEZI, ABDULAZIZ ALKANDARY

EBRAHEEM ALNAFJAN, ABDALRAHMAN ALREFAEI, COOPER HOLDEN

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Overview

- Project Description
- Design Description
- Design Requirements
- Summer Schedule
- Budget

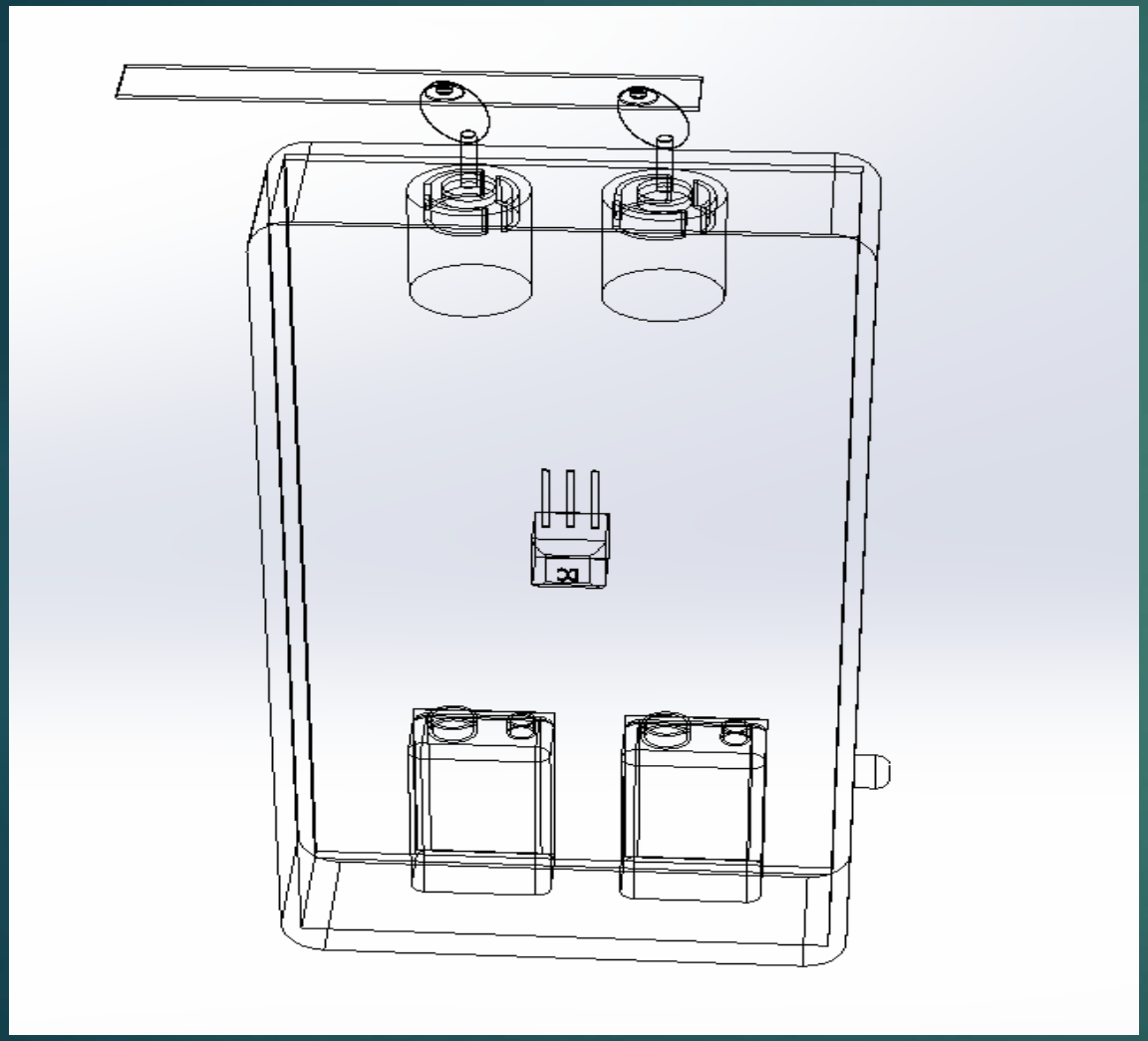
Project Description

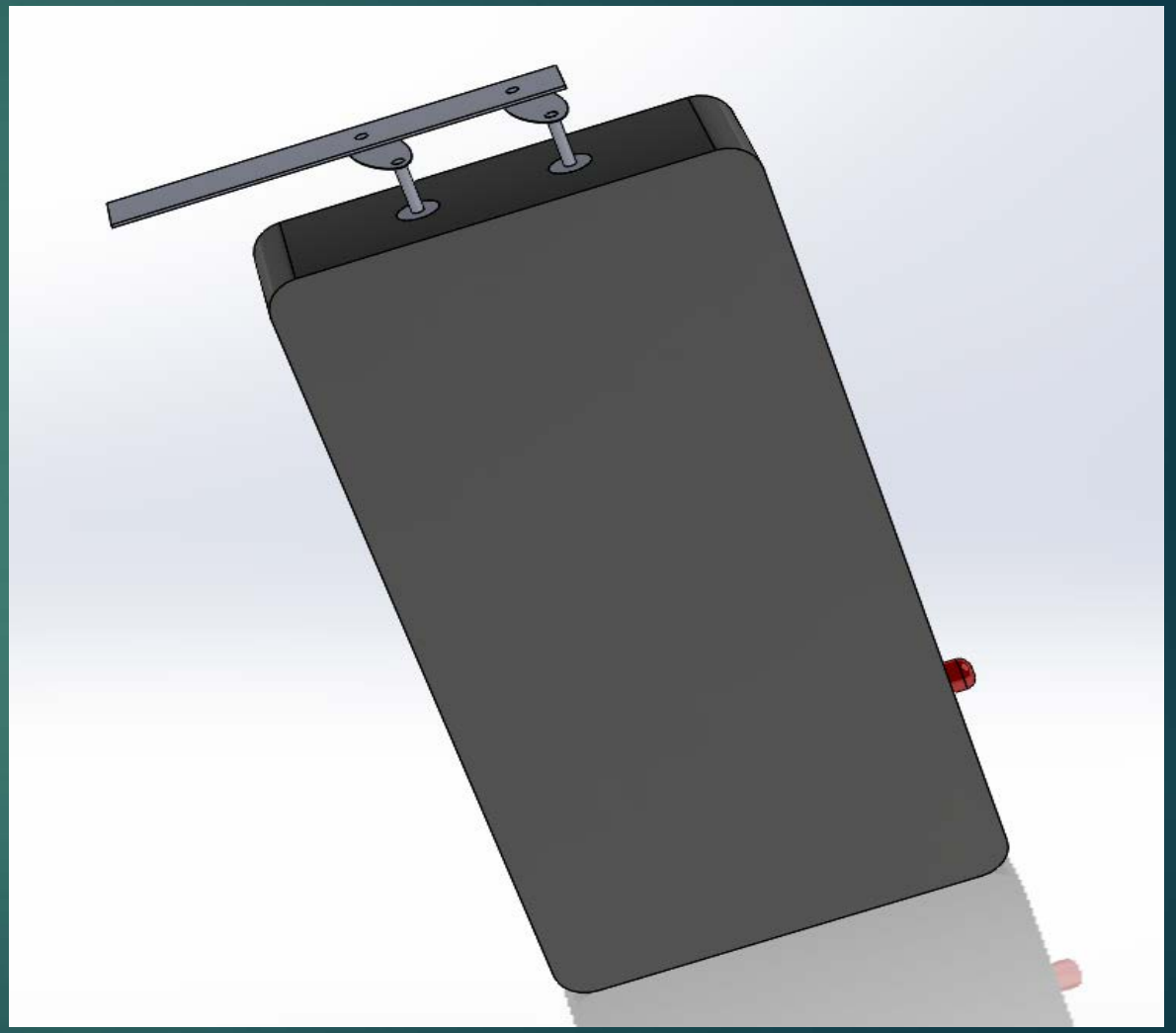
Dental triturators are used to mix a substance called amalgam to fill cavities. Our goal is to create a dental triturator that does not require a power source to operate as it will be used in areas where central power is not available. A device that can overcome these challenges is needed in order to help dental students provide improved dental hygiene to those who would not otherwise have access to such.

Project Sponsor

- **TRACYE A. MOORE, RDH, EDD**

Design Description





Design Description

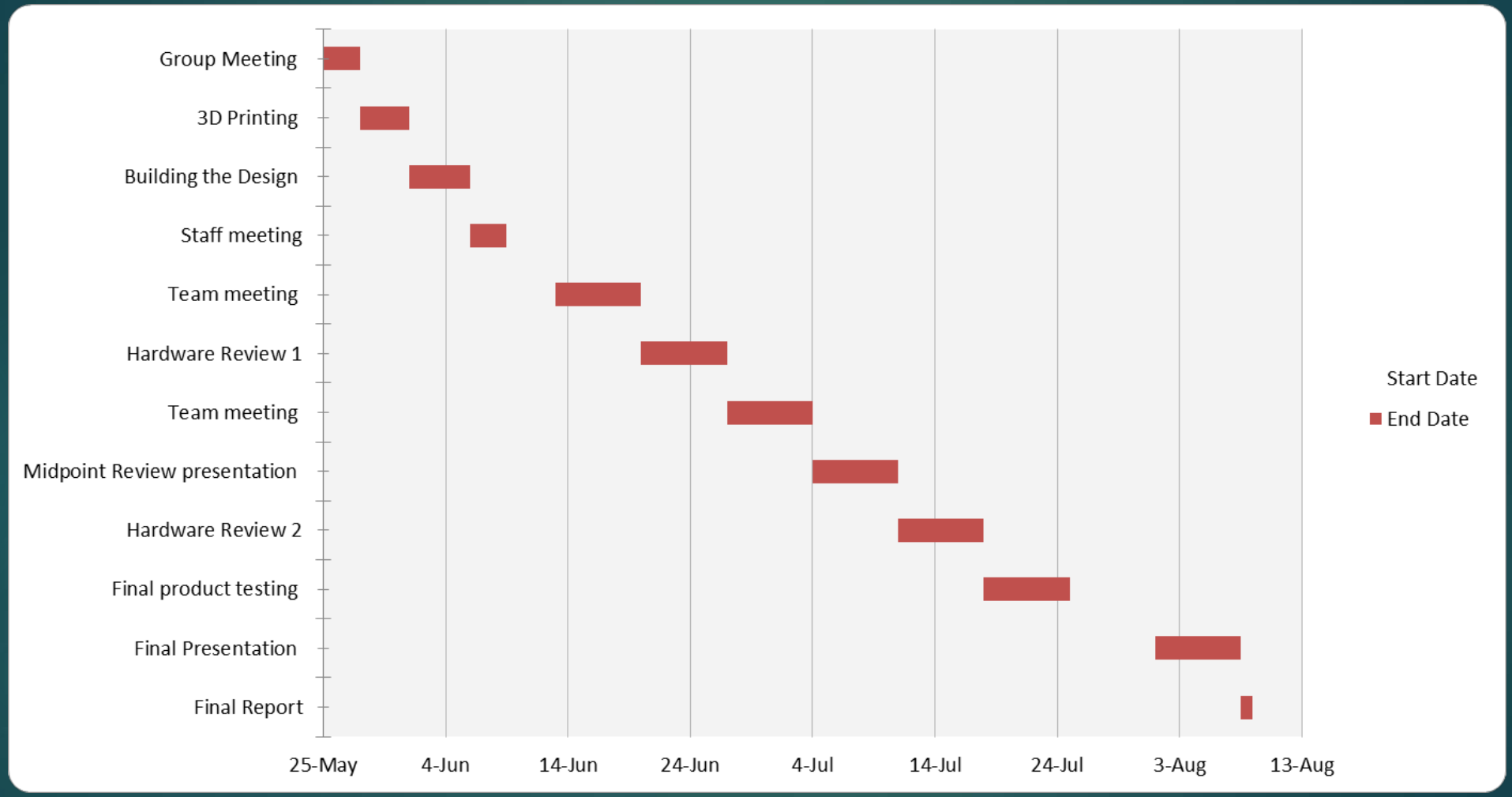
- Plastic housing made up of two pieces
  - One side can be opened to access inner components
  - Allows easy construction/maintenance
- Two electric motors powered by 9V batteries
  - Arm connected to motors changes rotational motion to linear motion
- DC-DC converter ensures steady power supply
- Capsule clips into arm
- User needs to only press and hold a button for desired time

Design Requirements

- Small - can be held with one or two hands
- Easy To Use - Insert capsule and press button
- Durable - High strength housing and simple internal design
- Repairable - Modular design means any part can be easily replaced
- Does not require external power source
- Completely Enclosed Design - only capsule and switch exposed
- Shake at required speed - 4600 rpm motor x2

Customer Requirement	Weight
1. Light Weight	5
2. Human Powered	4
3. Keep Budget as low as possible	4
4. Shake at specified frequency	5
5. Shake for specified time	5
6. Same size as electric model	3
7. Decent life span	2
8. Replaceable Parts	4
9. Easy to use	3
10. Completely enclosed system	5

Updated Schedule



Updated Budget

- Project total budget - $ 750
- Final design cost < $ 400
- If Solar Panel is used then final design cost > $ 400
- Anticipated expenses :
  - 3D - printing/housing - Approx. $19/kg: probably less
  - Material cost - $40 max
  - DC-DC Converter - $3-$25
  - Electric Motors - $5-$10 each
- Actual expenses to date: $ 0
- Resulting Balance : $ 750

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Summary

- Initial design ideas with pros/cons
- Designs that will be pursued further
- Customer requirements met by designs
- Updated summer schedule
- Updated budget

Questions?