Problem Statement

The objective of this project is to design a suction machine that can be manufactured from locally available materials with the ability to run off batteries, electrical power (when available) or human power. This device should provide the broadest range of possible applications while still remaining under the 100$ price limit.

Last Week’s Goals

- Type up formal PDS
- Meet Sunday at Wendt and report on this week’s research
- Decide on 3 design possibilities
- Research cost of necessary parts (e.g. electrical motors, valves…)
- Assign roles and begin working on mid-semester PowerPoint

Summary of Accomplishments

Met Sunday at Wendt for weekly meeting, typed up PDS, took picture and chose different vacuum source designs. Presented findings from individual research.

Came up with basic system for design, decided the vacuum source is most crucial and difficult element of the system. Possible 3 design ideas for vacuum source: electric motor/diaphragm system, mechanical plunger, water cooler design

Researched cost of parts and materials. Most new materials found to be too expensive for proposed budget, will probably go with used parts in prototype.

Fan updated website with PDS, picture, and timeline.
This week’s Goals
• Contact Prof. Franziak for mechanical vacuum source ideas
• Finish slides for Midsemester Presentation
• Research material costs
• Research pressure ranges of current medical aspirators
• Establish field contact to better understand available materials/expertise

Project Timeline

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
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<tbody>
<tr>
<td>1/26</td>
<td>Form team, contact client, assign team roles, set up client meeting</td>
</tr>
<tr>
<td>2/2</td>
<td>Literature search, create problem statement, begin PDS,</td>
</tr>
<tr>
<td>2/9</td>
<td>PDS, brainstorming, begin developing designs</td>
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<tr>
<td>2/16</td>
<td>Brainstorming</td>
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<td>2/23</td>
<td>Decide on 3 design alternatives, prepare for mid-semester presentation</td>
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<tr>
<td>3/2</td>
<td>Finish Mid-Semester Presentation</td>
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<td>3/9</td>
<td>Present, work on written report</td>
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<tr>
<td>3/16</td>
<td>Hand in written report/PDS/ design notebooks. Decide on final design</td>
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<tr>
<td>3/23</td>
<td>Work on final design</td>
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<tr>
<td>3/30</td>
<td>Work on final design</td>
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<tr>
<td>4/6</td>
<td>Spring Break Start EWH proposal</td>
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<tr>
<td>4/13</td>
<td>Work on final design/ Begin testing Send EWH proposal to client and advisor</td>
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<tr>
<td>4/20</td>
<td>Test prototype Finish EWH proposal</td>
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<tr>
<td>4/27</td>
<td>Finish Testing prototype, begin preparing poster and paper</td>
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<td>5/4</td>
<td>Final Poster Presentation</td>
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<tr>
<td>5/9</td>
<td>Hand in final written report and notebooks</td>
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<tr>
<td>5/11</td>
<td>Final meeting with advisors</td>
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Activities
Lucas:
   Weekly Meeting
- Individual research presentations (1 hr)
- Wrote PDS (1 hr)
Met with advisor/attended lecture (1 hr)
Materials/Parts cost research (1 hr)
**Total: 4 hours**

Fan:
Weekly Meeting
- Individual research presentations (1 hr)
- Wrote PDS (1 hr)
Met with advisor/attended lecture (1 hr)
Updated Website (1 hr)
**Total: 4 hours**

Tyler:
Weekly Meeting
- Individual research presentations (1 hr)
- Wrote PDS (1 hr)
Design Brainstorming (1 hr)
Met with advisor/attended lecture (1 hr)
**Total: 4 hours**

Nick
Weekly Meeting
- Individual research presentations (1 hr)
- Wrote PDS (1 hr)
Met with advisor/attended lecture (1 hr)
Design Brainstorming (1 hr)

**Total: 4 hours**