

# MEETING MINUTES

## Staff Meeting 3: Budget, Presentation 2

**Meeting Date: 9-25**

**Meeting Time: 5:30pm – 7:00pm**

**Attendees: Aaron, Gia, Logan, Michelle, Dr. Willy**

**Table 1: Meeting Minutes**

<p><b>Pre Meetings Class Info</b></p>	<p>Specification Table:          - Summary of specifications for different FFUs          Factor of Safety Table:          - Take entire bill of materials and put the minimum factor of safety for each individual part in its own column          Prototypes: should become more complex</p>	<p>ENG 314</p>
<p><b>Staff Meeting</b></p>	<p>First Presentation          - Calculations and how those calculations informed the design          - Create an excel that has the base calculations with assumptions and then as you update the assumptions you can update the excel to auto-update the calculations          - Calculations: adding up electrical loads, structural load analysis, mesh refinement on the FEA          Prototyping:          - 1<sup>st</sup> prototype: scale model with computer type fans          - 2<sup>nd</sup> prototype: depends on how many questions are still left          Self Learning:          - Michelle: Ansys Fluent Solver instead of Solidworks          - Whenever a fan is pushing a flow into a room it creates a turbulent flow even though the Reynolds number says its laminar          - Gia: Website development          - Aaron: CAD manufacturing          - Logan: Arduino for pressure/temp sensors, thermo coupler, thermosters, thermosters are easier than couplers and more applicable, pressure transducers are more difficult to program and to control a variable speed fan          - Could make the fan oversized and make the enclosure airtight and open up little holes to vary how porous the environment is.          Structural Analysis:          - T-slot frames (80/20): Comes in aluminum, to get different colors you could anodize it to different colors          - Uni-struts          - Square/rectangular aluminum tubing with drilled holes, mounting hardware will be designed and welded          - Dr. Willy suggests using the square/rectangular tubing and having sheet metal fabricated for the coupler pieces or aluminum angle iron with extruded Ls          - Square tubing for the outer walls (primary members) and then have the Ls as support triangles in the walls and ceiling supports (secondary members that can</p>	<p>ENG 314</p>

	<p>be cheaper), could use cables instead of Ls (only provide tension – Dr. Willy says not as good as Ls)</p> <ul style="list-style-type: none"> <li>- Aluminum – does not need powder coated, lighter for moving</li> <li>- Steel will rust which is why it needs powder coated</li> <li>- Issues with 12X8: getting it in and out of lab, material?</li> <li>- Willy likes the 12X8 design with a vertical beam every 4 ft and diagonal beams on each 4 ft</li> </ul> <p>Budget Liaison:</p> <ul style="list-style-type: none"> <li>- Talk directly to purchaser to coordinate with quotes</li> <li>- Direct purchases can be done easily</li> </ul>	
<b>Team Meeting</b>	<p>Questions for Becker:</p> <p>Budget:</p> <ul style="list-style-type: none"> <li>- Who is owning this cleanroom? How are we billing the items? Is he paying for everything directly?</li> </ul> <p>Website: team members have no particularities. Gia can do her thing.</p>	ENG 314

**Table 2: Action Items for Next Meeting**

<b>Action Item</b>	<b>Assigned To</b>	<b>Due Date</b>
Website: professional picture, resume, linked in link, personal bio	All	1 week before first website check
<p>Things to do before concept generation meeting:</p> <ol style="list-style-type: none"> <li>1. Cost of aluminum square beams instead of steel</li> <li>2. Cost of aluminum t-slotted frames instead of square beams</li> <li>3. CAD Model of 10x10 (Aaron) and 12X8 (Logan) using the t-slotted frames with an open ceiling. Create a BOM of the 80/20 parts with the CAD files.</li> <li>4. Ansys Fluent Solver to determine number of fans using the current CAD models</li> </ol>	<ol style="list-style-type: none"> <li>1. Gia</li> <li>2. Gia</li> <li>3. Aaron, Logan</li> <li>4. Michelle</li> </ol>	