**Unexplored Design Spaces**

**Format of Document:** ***Design Space to be Explored:*** *Basic idea of what this part of the design might do if implemented and what adjustments will need to be made to accommodate them.*

**Addition of Disinfection Phase:** This is a part of the wash process not included for this prototype, but to develop further, implementing this functionality will be key to making this design viable in a working environment.

**Circulatory Pump for Uncompressed Agitation:** Dislodge solid contaminants which might be locked within the clothing by compression, making flow back into the chamber rather ineffective for this type of contaminant. Additional plumbing as well as wash chamber inlets and outlets must be added.

**Draining of Fluid in Plumbing Through Capillary Action:** Mitigating the problem of dead space in the plumbing by forcing water to flow through the pipes and back to the wash chamber once the air intake is opened. This would require replacing piping with new types of piping that may not exist yet. Would likely only be effective in microgravity.

**Draining of Fluid in Plumbing Through Surface Tension:** Mitigating the problems of dead space in the plumbing. Using air and an additional decompression to displace the water

**Agitation Spray Nozzle:** Generating a higher velocity flow rate back into the wash chamber during the decompression in the agitation phase of the wash process. This could dislodge contaminants. This would require an additional inlet pipe and valves to the wash chamber from the reservoir.

**Rapid Fluid Evacuation Check Valve for Clothing Compression:** Simply a larger outlet to the wash chamber that will facilitate a greater flow out of the wash chamber during compression. Would require an additional outlet to the wash chamber.

**Vacuum Drying and Flash Agitation:** Retracting the chamber top to increase the volume of the wash chamber, reducing the pressure of the wash chamber greatly. Using this method could evaporate the water in the shirt, allowing it to dry better. Similarly, this method could be used to cause water to cavitate in the wash chamber, which might agitate the clothing. No additional hardware would be required for this, though current hardware is not explicitly built to hold a vacuum currently.