DATE: **May 8th, 2021**

TO: **Dr. Deirdre Hunter**

FROM: **Sindhuja Darisipudi**

SUBJECT: **Portable, Data Logging Incubator Post-Mortem**

**Introduction**

Our client is utilizing 3M Petrifilms for E.coli detection, a culture-based method for the detection of microbial contaminants. However, these films require a temperature-stable incubation environment in order to reliably detect microbial contaminants of concern in drinking water. Currently, they have identified several problems with their existing incubator (“The Armadillo Incubator”) and have asked us to create an improved, low-cost and portable incubator for these Petrifilms that is suitable for water sanitation testing research in remote areas that lack lab resources. **Our design challenge is to build an incubator for the Petrifilms that is suitable for water sanitation tests in these remote areas.**

**Post-Mortem**

Planning, especially through a Gantt chart, has allowed us to break down our complex problem and moving parts into a easy to tackle, digestible portions. It has also allowed us to delegate parts of our design to various team members, and hold ourselves accountable to meeting deadlines. The division of labor allowed us to make this project a manageable task, and allowed us to keep making progress even when certain members had high workloads or other tasks in their personal lives. In order to keep cohesion with all of the various components and aspects of our project, our team met at least once a week outside of class, in combination with prototyping sessions. We also frequently texted each other in our group chats in order to keep each other updated on progress. Last, we had meeting notes for each meeting to keep those who missed meeting on track with what we were working on.

In order to make design decisions, we spoke to each team member, and we each voiced our opinions. After we talked through our opinions, we talked through the strengths and weaknesses of each potential solution and came to a consensus as a group.

Our final prototype was extremely successful, as we met almost all of our design criteria. We believe that we will be able to meet the final design criteria that we have not tested yet. Our prototype was able to successfully perform an incubation cycle.

Our entire team worked very well together, but we still have areas to grow in our communication. This is likely due to the fact that we all had different priorities and desires for our project. Communicating our goals better together in the beginning would have assisted us in tackling this project.

In the future, having a common set of goals and a structured plan from before the point at which we created a Gantt chart would have helped us be a more effective team. Other than that, our work in creating deliverables and a working prototype was extremely successful, and continuing to work in that manner would help us continue to be a good group