WEEKLY SPONSOR COMMUNICATION

TO:	VICTOR NUNEZ, AESCULAP
FROM:	CASSIE CHRISTMAN
TEAM NAME AND NUMBER:	AESCULAP 1
DATES COVERED IN THIS COMMUNICATION:	DECEMBER 12, 2016 TO DECEMBER 18, 2016
WEEK NUMBER:	15 OF 15

Introduction

The team would like to thank you for accompanying us on the journey that has been our Technical Entrepreneurship Capstone course. We immensely appreciate the active role you have taken in our project and your willingness to help at every turn of the way. We absolutely would not have been able to accomplish all the work we did if not for your assistance; once again, thank you for all you have done.

Overview

As we concluded our final week of Technical Entrepreneurship Capstone, we primarily wrapped up any remaining loose ends for the project and worked on our final presentation. Final tasks included running the FEA in ANSYS and completing the written and graphical summaries.

Accomplishments

1. One of the most important tasks we had left to tackle was the FEA of the distractor. However, we were unable to accomplish this imperative assignment until we had the final design completely finished; thus, we were only able to do it this week. From running the FEA, we got the results displayed in Exhibits 1-4. When 2000N was applied to the paddles in the distracted state, the paddles deflected 7mm. When 300N was applied to the handles when the paddles were fully closed, the handles deflected approximately 2.5mm. However, in both FEA's, the stresses in distractor never exceeded the yield strength of the material. It is apparent from the FEA that changes need to be made to the design before it could go to manufacturing. These include thickening the paddles and the ends of the handles. Additionally, in future analysis, the contact relationships between the components should be refined so a better FEA can be generated. However, we believe these changes would be easy to accomplish.

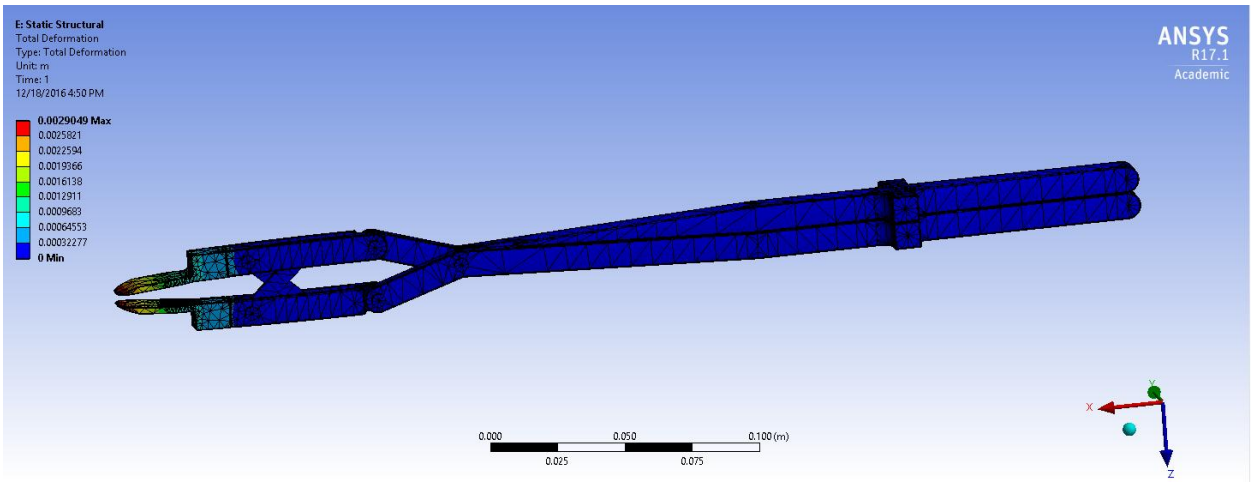

Exhibit 1 – Deformation in Distracted State

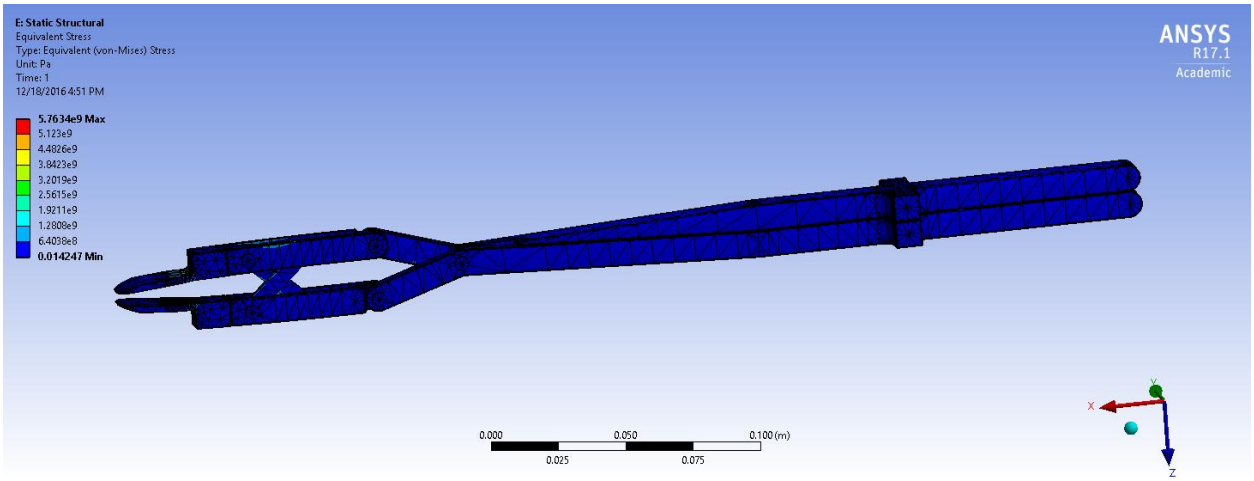

Exhibit 2 – Von Mises Stresses in Distracted State

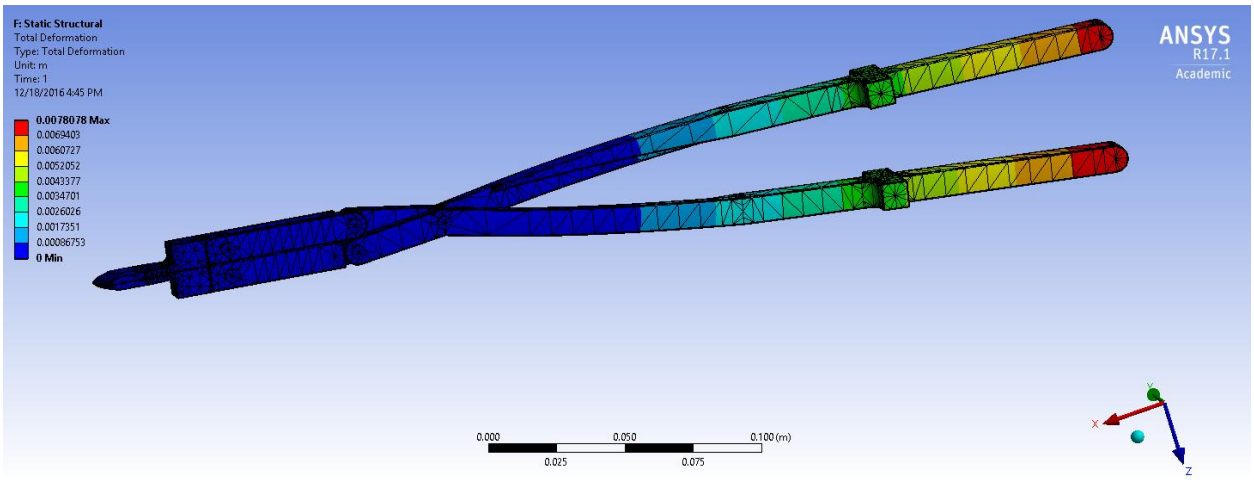

Exhibit 3 – Deformation in Closed State

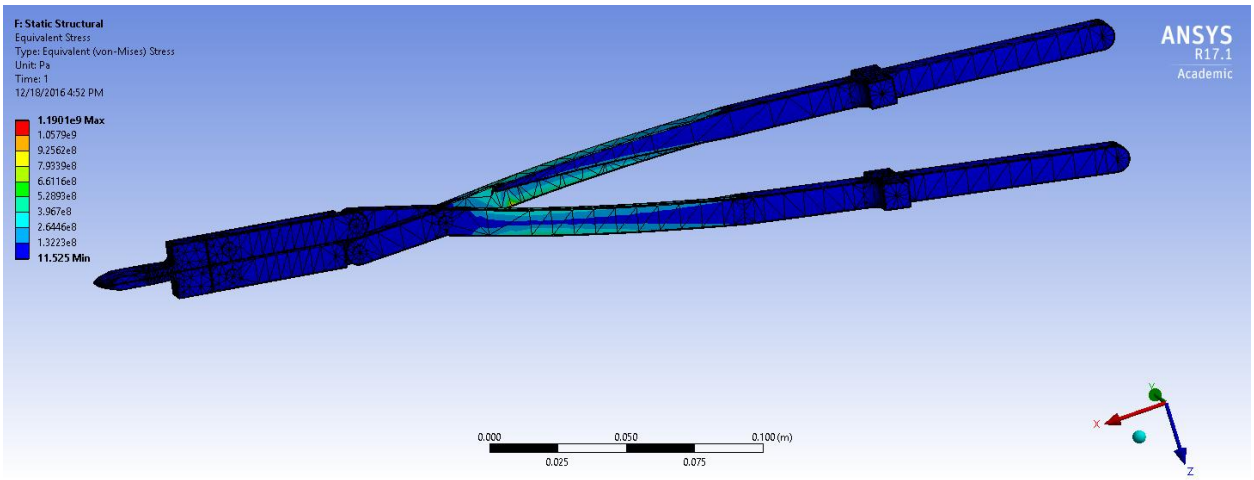

Exhibit 4 – Deformation in Closed State

2. Similar to last semester, we also had to create a written summary and a graphical summary of the work we achieved both this semester and last. We decided to divvy up the summaries with Christian, Alexis and myself working on the written summary and Jadon and Brian focusing on the graphical summary. These will be shared with you by the Technical Entrepreneurship department in the near future.

3. In addition to wrapping up loose ends, Brian also had a scaled up model of our ratchet system 3D printed so it would be easier for us to determine how to integrate it into the distractor. Seeing a physical model of the ratchet system also allowed us check that our design will function as it should, which we believe it will. The 3D printed model is shown in Exhibit 5.

Exhibit 5 - 3D Printed Model of Ratchet System

Next Steps

We will be practicing our final presentation in preparation for Wednesday.

Questions

Do you have a preferred time of day on Tuesday you would like the team to stop by to pick up the 3D model?