

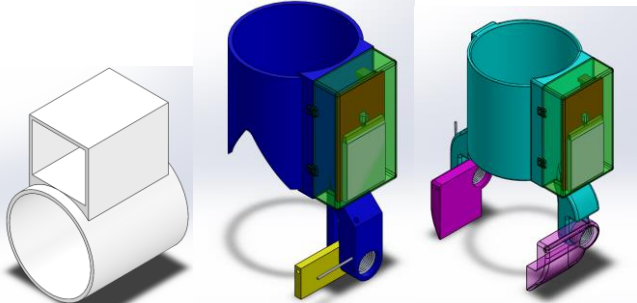
ACTION ITEMS



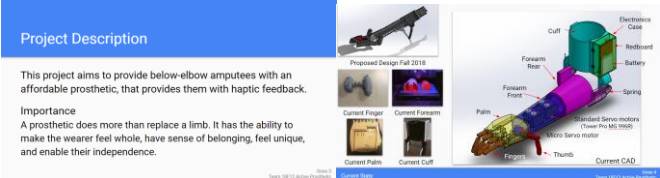
TEAM 12: Active Prosthetic Arm

Due Date:
Wednesday, March 13, 2019 5:30pm


The following are the Action Items from last week:

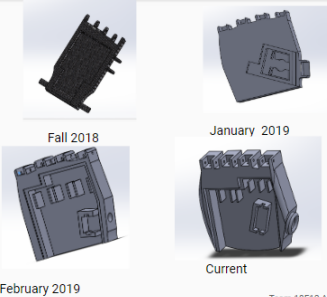
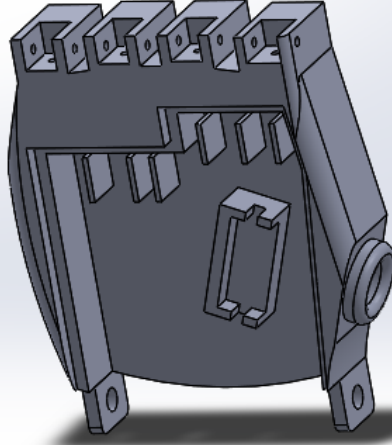
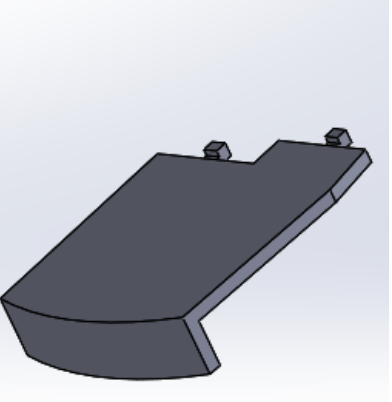
Team Member: Felicity Escarzaga

Action Item	Date Due	Date Completed	Result/Proof of Completion
1. Meeting with Winfree	3/11	-	Meeting Cancelled
2. Fix prusa MK3 i3	3/13	3/10	New extruder assembled Machine no longer give warning error when heating
3. Redesigned Cuff Twice (V3.2)	3/13	3/9	Version 3 iteration 0, 1, and 2 in order.  V3.0 starts with a solid circular cuff no longer to be thermoformed. V3.1 Arduino case changed to attach separately, forearm attachment added with spring assist. V3.2 Dual spring assist, forearm attachment redesigned for easier fabrication and reinforced attachment point.

4. Print Cuff	3/13	3/11	<p>Cuff printed but came out completely shredded due to multiple filament jams. Was taped together to estimate sizing</p> 
5. Work of PP slides for Presentation	3/13	3/12	<p>Completed my assigned slides</p>  <p>Helped with two of Toni's slides since they required more work (creating assembled cad, added to description)</p> 
6. Met with EE team (Ethan)	3/13	3/10	Discussed new board for wireless control.

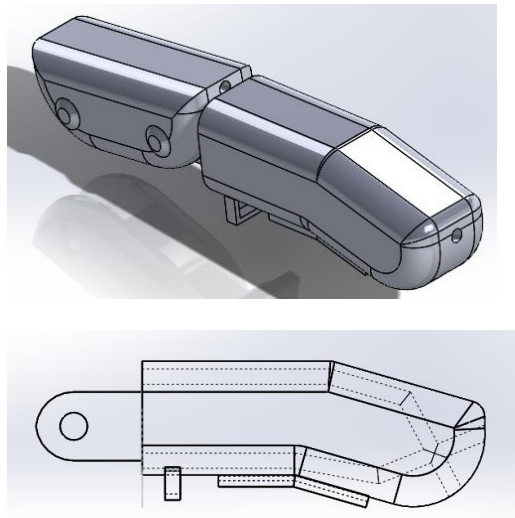
Team Member: Antoinette Goss


Action Item	Date Due	Date Completed	Result/Proof of Completion
Complete assigned slides	3/13/2019	3/13/2019	<p>Complete assigned slides with the Help of Felicity(assembly model and description)</p> 

			<p>Updates-Palm</p> <ul style="list-style-type: none"> • Fall 2018- Palm was more basic with no opening for motor. Thumb had minimal movement • January 2019- Palm adjusted with opening and for ball and socket attachment • February 2019- Continual adjustment to palm opening to allow for an easy assembly and for user to be able to adjust the wires and motor attachment. Thumb not was full mobility • Current Model- Now includes better attachments for the forearm and fingers. More aesthetically appealing  <p style="text-align: right;"><small>Goss 8 Team 18F12 Active Prosthesis</small></p>
Update palm for better attachment for both the fingers and forearm	3/13/2019	3/13/2019	  <p>Updated attachment for forearm and improved attachment of fingers</p>
Edit midpoint report	3/13/2019	3/13/2019	Still in progress as this is not due until Friday but more content could be added and edited.

Test new attachment	3/13/2019	progress	New attachment is being printed in the makers lab
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Team Member: Jannell Broderick


Action Item		Date Due	Date Completed	Result/Proof of Completion
Make minor modifications to the fingers		Mar 13	Mar 12	<p>The new finger design incorporates the sensors and grips. A channel was added to hold the sensor wires in place. In addition, the inner channels for the artificial tendons was altered. The fishing line (or other tendon substitute) will loop back around. Thus, the finger can be moved in both directions. The main change from before is the thickness of the finger. The new finger is thinner.</p> 
Print finger		Mar 13	Incomplete	After the new design was drawn in CAD. The presentation took priority so I didn't print the new design.
Make Edits and add Sections to proposal (executive summary, Manage Design Description		Mar 15	In progress	The report will be edited and I will be writing about the changes I made to the fingers, the individual analysis, and more. Make Edits and add Sections to proposal (executive summary, Manage Design Description.

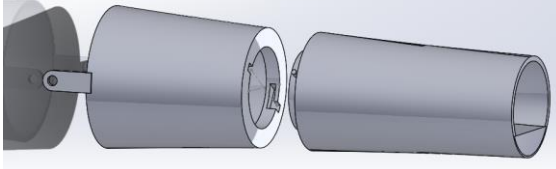
Work with Toni to connect fingers to palm.		Mar 13	Incomplete	This can not be completed until the fingers are printed. The parts fit together in solidworks but need to be tested after printing.
Presentation slides		Mar 13	Mar 13	<p>I completed slides on the new finger designs and the manufacturing that still needs to be completed for the hand.</p> 

Team Member: Allison Cutler

Action Item	Date Due	Date Completed	Result/Proof of Completion
Make edits to Fall Final Proposal Sections 3.1, 4, 5.2.1, and 6	3/13/2019	3/7/2019	<ul style="list-style-type: none"> Edits from TA's comments on the Final Proposal of Fall 2018 were implemented to these respective sections.
Write Midpoint Report Sections 7 intro, 7.2.2	3/13/2019	3/13/2019	<ul style="list-style-type: none"> These sections were filled out but need further edits before the report can be submitted (on 3/15)

			<p>7.2.2 Forearm</p> <p>The forearm went through three iterations after the Fall prototype before a design was agreed to be the most beneficial to the project. The Fall prototype was a single flat piece that was thermoformed to make the arm shape. This design was not efficient due to the forearm needing to house four servo motors for finger actuation. The first iteration of the Spring semester was two flat pieces thermoformed using a mold, so that the forearm would be able to house motors. The printed and thermoformed pieces are shown in figure 7.2.A and the mold is in figure 7.2.B</p> <p>7 IMPLEMENTATION - Second Semester</p> <p>When implementing the prototype manufacturing mainly consisted of 3D printing components of the arm and making alterations when components did not go together. Manufacturing also includes arranging the electrical components within the assembly in order to make a fully functional prototype. Through these methods of manufacturing, multiple design changes had to occur for each component in order to incorporate the electrical components and attachment mechanisms to other mechanical components. Multiple iterations of subsystems occurred throughout the semester in trial and error of prototype assembly. This trial and error was the most efficient method of manufacturing for this project because sometimes visualizing the component in SolidWorks or assembling the prototype only in SolidWorks was inaccurate to what the components would look like or how the components would behave once in a physical form. </p> <ul style="list-style-type: none">● These images are only small sections of what was written to show proof that they were written
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<p>Work on Midpoint Presentation Slides on Update, Testing Plans, Schedule, and Budget</p>	<p>3/13/2019</p>	<p>3/8/2019</p>	 <ul style="list-style-type: none"> • Respective slides are completed
<p>Re-draft forearm prints and begin redesigning (write notes on model)</p>	<p>3/13/2019</p>	<p>Not Completed</p>	<ul style="list-style-type: none"> • This was not completed because this task was replaced with redesigning the forearm for a completely new iteration. <ul style="list-style-type: none"> ◦ This change was due to not wanting a flat portion of the forearm

Redesigned Forearm	Not Assigned	3/11/2019	 <ul style="list-style-type: none"> • Design includes fully circular arm, new attachment mechanism for the back piece and front piece, and a flat portion on the front for the motors to rest on
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The following are the Action Items for next week:

Team Member	Action Items	Date Due
Felicity	<ol style="list-style-type: none"> 1. Finish Midpoint Report 2. Resize Cuff to fit forearm 3. Reprint Cuff 	<ol style="list-style-type: none"> 1. 3/15/2019 2. 3/27/2019 3. 3/27/2019
Antoinette	<ol style="list-style-type: none"> 1. Complete midpoint report 2. Continue to work on palm and assembly components 3. Reprint palm with adjusted attachments to begin assembly 	<ol style="list-style-type: none"> 1. 3/15/2019 2. 3/27/2019 3. 3/27/2019
Jannell	<ol style="list-style-type: none"> 1. Work with toni to connect fingers to palm 2. Modify rotating base of thumb (needs to allow the tendons to run through while and keeping it's range of motion) 3. Finish Edits and add Sections to proposal (executive summary, Manage Design Description) 4. Work with the team to ensure all subsystems connect properly 5. Ensure fingers are able to be scaled to individuals 6. Update website with new reports and presentations 	<ol style="list-style-type: none"> 1. 3/27/2019 2. 3/27/2019 3. 3/15/2019 4. 3/27/2019 5. 3/27/2019 6. 3/27/2019
Allison	<ol style="list-style-type: none"> 1. Print forearm and write dimension changes on arm as necessary for servo motor incorporation 2. Work on brainstorming attachment to Palm (with or without Toni depending on Spring Break) 3. Make adjustments for spring attachment 	<ol style="list-style-type: none"> 1. 3/27/2019 2. 3/27/2019 3. 3/27/2019