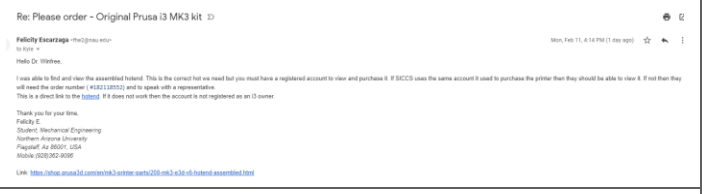
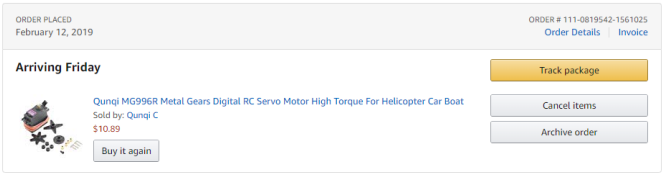
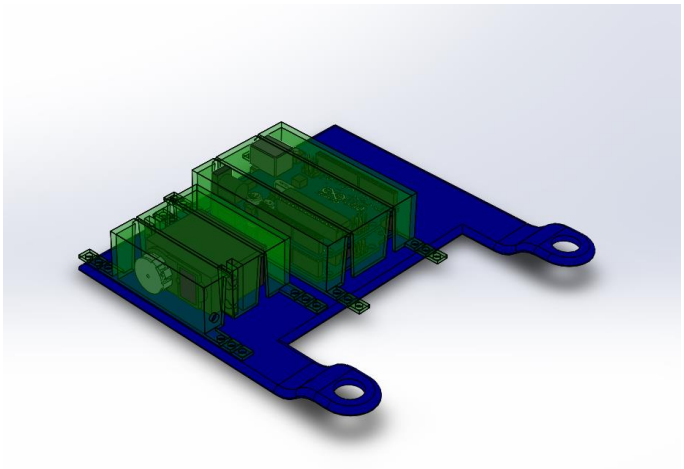
ACTION ITEMS

TEAM 12: Active Prosthetic Arm

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

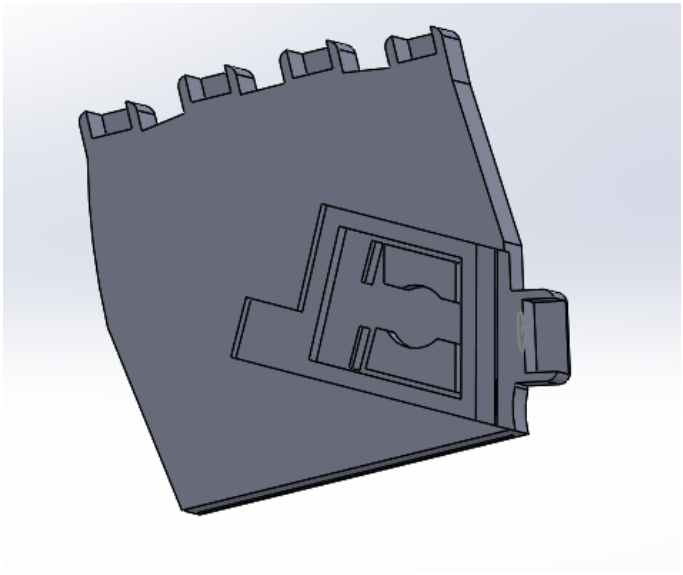
The following are the Action Items from last week:

Team Member: Felicity Escarzaga

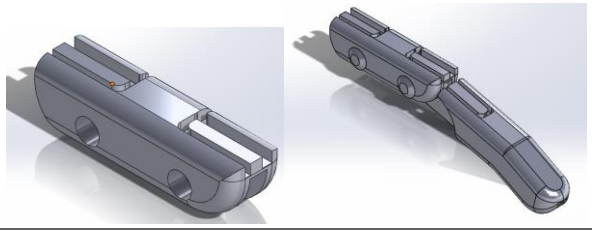
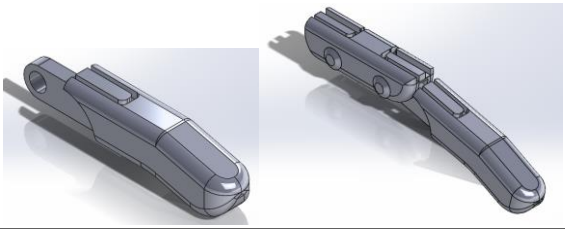
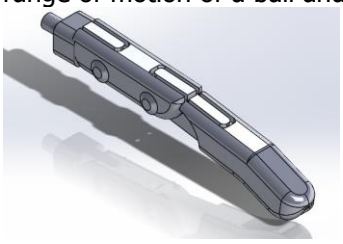
Action Item	Date Due	Date Completed	Result/Proof of Completion
1. Order custom Prusa extruder	1. 2/13/19	2/11/19	 Re: Please order - Original Prusa i3 MK3 kit Felicity Escarzaga Hello Dr. Winfree, I was able to find and view the assembled hotend. This is the correct hot we need but you must have a registered account to view and purchase it. If SICCS uses the same account it used to purchase the printer then they should be able to view it. If not then they will need the order number (#182118552) and to speak with a representative. This is a direct link to the hotend. If it does not work then the account is not registered as an i3 owner. Thank you for your time, Felicity E. Student, Mechanical Engineering Northern Arizona University Flagstaff, Az 86001, USA Mobile (928)362-9096 Link: https://shop.prusa3d.com/en/mk3-airtner-parts/268-mk3-e3d-v6-hotend-assembled.html
2. Order Servo Motor	2. 2/10/19	2/12/19	 ORDER PLACED February 12, 2019 ORDER # 111-0819542-1561025 Order Details | Invoice Arriving Friday Track package Qunqi MG996R Metal Gears Digital RC Servo Motor High Torque For Helicopter Car Boat Sold by: Qunqi C $10.89 Buy it again Cancel items Archive order
3. Finish modifications for cuff	4. 2/12/19	2/10/19	 Motor: *https://www.youtube.com/watch?v=suFpHNYdw8A*. (2014). [video] Directed by M. Hussein. YouTube: Solidworks Designs. Arduino:

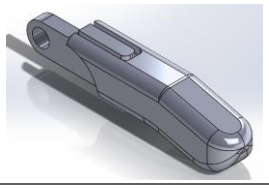
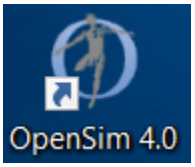
			I. Enrique, “Arduino UNO,” GrabCAD: Design Community, CAD Library, 3D Printing Software, 07-May-2018. [Online]. Available: https://grabcad.com/library/arduino-uno-18. [Accessed: 30-Jan-2019].

Team Member: Antoinette Goss

Action Item	Date Due	Date Completed	Result/Proof of Completion
Complete design of CAD palm	Feb 13	in progress	the design can be found below. The hinge design, upon further inspection, was changed to a latch design for a more aesthetically pleasing look. The size will likely need to be modified slightly for each individual finger and the thumb placement will possibly be modified once testing is completed for the latch. It also accommodates for a ball and socket opening for the thumb but this too may need to be modified. 
Possibly start testing 3d printed model	Feb 13	In progress	the testing will be completed this weekend as the design has just been completed this week
be assigned individual analysis topic	Feb 13	In progress	The roles of the individual analysis were discussed during the weekend during the team meeting. The roles for two members are still to be assigned and will be decided during the next meeting.

Team Member: Jannell Broderick

Action Item	Date Due	Date Completed	Result/Proof of Completion
Work on and update website check	Feb 8	Feb 8	The website will be updated by this Friday. The website will have all new documents and professional photos of the team members. https://www.cefns.nau.edu/capstone/projects/ME/2018/18F12_ActiveProsthetic/
SolidWorks CAD Design of Proximal Digits (2-4)	Feb 10	Feb 10	The proximal digit (finger bone closest to the palm) Cad Design for fingers 2-4 (pointer through pinky). These proximal digits are all identical except in size. They will involve a hinge so the fingers can bend to grasp items. 
SolidWorks CAD Design of Distal Digits (2-4)	Feb 10	Feb 10	The Distal digit (finger bone farthest to the palm) Cad Design for fingers 2-4 (pointer through pinky). These proximal digits are all identical except in size. They will involve a hinge so the fingers can bend to grasp items. 
SolidWorks CAD Design of Proximal Digit 1 and rotato	Feb 13	In Progress	The proximal digit (finger bone closest to the palm) Cad Design for fingers 1 (Thumb). It will involve a hinge so the fingers can bend to grasp items. This design is altered from the original design. The new design can revolve and bend. This, allows the thumb to create the range of motion of a ball and socket. 

SolidWorks CAD Design of Distal Digit 1	Feb 10	Feb 10	The Distal digit (finger bone farthest to the palm) Cad Design for fingers 2-4 (pointer through pinky). This differs from the other fingers because it will incorporate a ball and socket joint rather than a hinge. 
Install Open Sim onto computer and begin learning the simulation code	Feb 10	Feb 10	The open sim program will allow Jannell to simulate the dynamic and static forces on the hand. This would be a helpful and interesting individual analysis. 

Team Member: Allison Cutler

Action Item	Date Due	Date Completed	Result/Proof of Completion
Design and print the forearm mold	Feb 13	Feb 11th	 • The mold is used for thermoforming the flat forearm pieces around

Begin design of forearm halves and possibly test print then	Feb 13	Feb 12th	 • Dimensions of the hinges and clips are off, so the pieces do not fit together. • These can still be used to test thermoforming around the mold
Begin Individual analysis • Determine what will be done as the analysis	Feb 13	Feb 10th	• The analysis will be coding wireless communication between the foot insole and the arduinos on the prosthetic arm • Includes research on XBEE and possible other Bluetooth communications in order to find what is doable • The analysis will be code and proof of code once the communication method is determined

The following are the Action Items for next week:

Team Member	Action Items	Date Due
Felicity	1. Check on order for Prusa Extruder (install if arrived) 2. Print Pulley and gear 3. Test Pulley on Servo motor	1. 2/14/19 2. 2/16/19 3. 2/18/19
Antoinette	1. complete testing on door design to see if latch design is successful. Print latch component 2. Complete Cad design with modifications from janelle and Allison 3. collaborate with Janelle on her thumb placement on the palm 4. Collaborate with Allison for the forearm attachment 5. work on individual analysis	1. 2/20/2018 2. 2/20/2018 3. 2/20/2018 4. 2.17/2018 5. 2/17/2018 6. 2/17/2018
Janelle	1. Work on and update website check 2. SolidWorks CAD Design of Proximal Digits (2-4) 3. SolidWorks CAD Design of Distal Digits (2-4) 4. SolidWorks CAD Design of Proximal Digit 1 5. SolidWorks CAD Design of Distal Digit 1 **6.** Install Open Sim onto computer and begin learning the simulation code	1. 2/20/19 2. 2/20/19 3. 2/20/19 4. 2/20/19 5. 2/20/19 6. 2/20/19

Allison	1. Thermoform forearm halves using the mold to test the practicality of both designs 2. Make alterations to designs based upon thermoforming test 3. Begin designing servo motor holder in SolidWorks 4. Work with Felicity on possible pulley mechanism between motors in arm and finger movement 5. Start researching bluetooth communication possibilities and coding for analysis	1. 2/20/2019 2. 2/20/2019 3. 2/20/2019 4. 2/17/2019 5. 2/20/2019