WEEKLY SPONSOR COMMUNICATION

TO:	VICTOR NUNEZ, AESCULAP
FROM:	CASSIE CHRISTMAN
EDITOR:	JADON SARGEANT
TEAM NAME AND NUMBER:	AESCULAP 1
DATES COVERED IN THIS COMMUNICATION:	FEBRUARY 22, 2016 TO FEBRUARY 28, 2016
WEEK NUMBER:	4 OF 15

Overview

This week we began completing the topics of our midterm presentation that we divided among ourselves last week. Those topics included: industry, company, and project description, our mission statement, our intellectual property research, our standards research, customer needs, and target specifications.

Thank you for sending Brian your presentations, as well as the video and surgical procedure. These have helped us obtain a better understanding of the function of our device and will continue to be useful once we begin generating ideas for the product.

Accomplishments

1. The progress we made on the midterm presentation topics we outlined last week is described below:
    - Industry, Company, and Project Description: Cassie Obzud
      Cassie further researched both the medical device industry and Aesculap using the presentations you sent to us, as well as online research. Currently, she is trying to condense the information to be used for our presentation. Additionally, she is collecting information on what currently exists in the market and on market competitors.
    - Mission Statement: Brian Loughran
      Brian furthered his research on mission statements by examining mission statements done by previous teams that have completed this course. He also developed a second draft of our mission statement and sent it to our faculty advisor for her opinion.
    - Intellectual Property Research: Christian Davis
      Christian continued researching spinal distractors patented by various companies. Information regarding those devices including the patent number, classification, inventor, assignee, a description, category, issue date and expiration date can be found in the Appendix.
    - Standards Research: Christian Davis and Alexis Haupt
      As stated in last week's brief, the research conducted for this topic will primarily be done on an as-needed basis.

- Customer Needs: Alexis Haupt and Cassie Christman
  I researched spinal surgeons in the Lehigh Valley area and will contact them this upcoming week to schedule interviews. I also wrote a letter to a spinal surgeon I indirectly know which will be given to him this upcoming week. Alexis and I began generating questions to ask both surgeons and Greg to gain their perspectives on features to include in the device.
- Target Specifications: Jadon Sargeant
  Jadon focused on comparing different types of medical grade metals. He found that, in general, stainless steel appears to the best option, but if additional strength is needed to satisfy the 1000N requirement, a titanium alloy could alternatively be used. Furthermore, he researched several common methods of applying vertical force to an object. He plans to assess the pros and cons of each while keeping the surgeon in consideration.

2. We individually examined the presentations, video, and surgical procedure you sent to Brian last week and now feel more confident we understand how the device design will influence the procedure. We also have a better appreciation for the small profile the distractor must have and the importance of the device being easily seen under x-ray visualization.

3. Christian and Brian went on a tour of the different prototyping facilities at Lehigh to learn more about the resources available to us on campus. These facilities include a 3D printing lab, a computer lab with access to design and simulation software, a creativity lab with studio lighting to take professional-looking photos, a metal shop that includes laser cutters, welders, and other tools, a spray booth for painting, and a woodshop.

4. Jadon also completed the first draft of our budget and is seeking our faculty advisor's approval. Our budget will allow us to purchase materials, use lab equipment, and cover other expenses we may come across.

Next Steps

1. We will continue making progress on the tasks needed for our midterm presentation.
2. At the end of this upcoming week, we will also be creating our midterm presentation powerpoint and rehearsing it.

Appendix: IP Research

Patent Number	Classification	Inventor	Assignee	Description	Categories	Issue Date	Expiration Date
6,224,599	606/90	Matthew		Utilizes a wedge to separate vertebra. Wedge is detachable from handle		5/1/2001	
6,261,296	606/90	Max Aebi	Synthes U.S.A	Scissor-type distracting mechanism. Removable distraction blades. Screw-type locking mechanism at end of handles		7/17/2001	
6,340,363	606/90	Ciaran Bolger	Surgical Navigation Technologies,	Distractor used with a computer controlled navigation system employing an energy-detecting array to track position		1/22/2002	
6,565,574	606/90	Gary Michelson				5/20/2003	
6,712,825	606/90	Max Aebi		Scissor-type distracting mechanism. Removable distraction blades. Screw-type locking mechanism at end of handles		3/30/2004	
7,108,698	606/90	Daniel Robbins	Zimmer Spine, Inc.	Elongated blade member having a wing located on an edge of the blade member, and a handle. The wing is used to retract a nerve root (if necessary).		9/19/2006	
7,575,576	606/90	Rafail Zubok	SpineCore, Inc.	Wedge ramp distractor and parallel insertion distractor. Both utilizing two prongs on either arm of distractor to attach to the implant.		8/18/2009	
7,625,380	606/99	Troy Drewry	Warsaw Orthopedic, Inc.	Interchangeable wedge heads used for distraction. Locking assembly includes a cam lever.		12/1/2009	
7,896,884	606/90	Charles Wing	Aesculap Inc.	Two arms are angled such that they meet at a point at the distal end, defining a distractor plate. Distance between arms is adjusted via a rack and pinion.		3/1/2011	
8,066,710	606/90	Bradley Estes	Warsaw Orthopedic, Inc.	Wedge-like tip at the end of a long T-shaped handle. "Window" at the proximal end of the instrument to improve visibility during distraction.		11/29/2011	
8,105,331	606/90	Marshall Ephraim Stauber	Globus Medical, Inc.	A rounded (doorway arch) profile sits at the end of the distractor. Distractor is mated via key to retractor such that a force can be applied to the retractor to insert the distractor and then retractor can then be removed, leaving the distractor between the vertebra to maintain spacing.		1/31/2012	
8,114,088	606/90	Peter Thomas Miller	Zimmer Spine, Inc.	Gear/pinion mechanism which allows the surgeon to rotate either a knob or handle to expand the flat retraction teeth.		2/14/2012	
8,197,488	606/90	Michael Sorrenti	DePuy Spine, Inc.	A double/parallel crossbar setup allows for distraction when one crossbar is moved relative to the other. A pin locking mechanism is utilized		6/12/2012	
8,277,456	606/90	Susanna Pischl	Ulrich GmbH & Co. KG	Two plates seperated by a scissor jack are expanded/contracted via a rotating handle		10/2/2012	
8,540,724	606/99	Randall Mast	Lanx, Inc.			9/24/2013	