Introduction
- The need for affordable prosthetics is a major issue, especially in third-world countries.
- Much greater demand for prosthetics due to disease, natural disasters, and war
- Supply does not meet the current demand-only about 5% of the 40 million amputees in third-world countries receive prosthetics [1].
- Challenges [2]
  - Lack of materials
  - Not enough highly-trained prosthetists
  - Need to tailor prosthetics to cultural factors

Partners
- Cure international is a non-profit organization that operates charitable hospitals and programs in 30 countries worldwide.
- Since their first hospital opened in Kenya in 1998, Cure International have had over 2.8 million outpatient visits, provided over 204,000 life-changing surgeries, and trained over 7,200 medical professionals.
- The mission of AIC Kijabe Hospital that is to glorify God through the provision of compassionate health care, excellent medical training, and spiritual ministry in Jesus Christ.

Foot/Ankle
- Old Model
  - Made using Delrin
  - 3D-Printed: Less available, environmental concerns
  - Focus on high-tech functionality, not manufacturability
  - Not practical for our goal
- New Model
  - Made using locally available materials-rubber and aluminum.
  - Simple design: easily manufacturable
  - Absorbs energy upon impact: lowers risk of failure
  - Releases energy as the foot leaves the ground: more natural stride
  - Prototype

Conclusion
- All three lower limb components-knee, shank, and foot- have been designed or redesigned to be easily manufactured in locations like Kijabe, Kenya where supplies and machining technology are limited.
- The group was not able to assemble a completely manufactured limb, but the shank component is done, and the knee is nearly done being made.

Moving Forward
- Because of growth in the biomedical concentration, the BioSTEP group will separate into smaller groups.
- Compared to the current BioSTEP project, the new groups will be more client-driven.
- These new groups include a prosthetic knee redesign group and a clubfoot orthotic brace group.

References

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